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ORIGINAL DEPARTMENT.

LECTURE.

STATIC AND DYNAMIC ELECTRICITY.

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GENTLEMEN: In my last lecture I described to you the electrical machine, as first invented, 1671, by Otto von Guericke, the mayor of Magdeburg, mentioned the experiment of Bishop Watson, who, 1747, on Shooter's Hill, sent the shock of a Leyden jar through 10,600 feet of wire, insulated on wood, and informed you that it was Gray who, 1729, discovered the power of conduction possessed by all metals and most fluids, and that the first telegraph was erected 1833 by Professors Gaus and Weber in Göttingen, between the Physical Laboratory and the Astronomical Observatory of that city, a distance of 12,000 feet. I then spoke of the difference between an electrical discharge and an electrical current, showed you the composition of the Leyden jar and of the electrical battery, consisting of a number of such jars, dwelt some time on the difference between quantity and intensity, and having mentioned the value of the electroscope and the electrometer, concluded my lecture by drawing your attention to the velocity of electricity, and to the fact that the electrical current, traveling at the rate of 288,000 miles per second, if unimpeded, differs greatly from nervous force, which during the same period of time will pass over a distance of but 30 yards.

I shall now continue my subject. As frictional or static electricity possesses great force but little quantity, its chemical action is always very feeble; for the amount of chemical matter decomposed does not depend upon the intensity, but upon the quantity of electricity employed. As galvanism possesses a great quantity, though little density, it easily causes chemical decomposition.

The great Faraday calculated that the large Leyden battery at the Royal Institution would have to be charged by 800,000 turns of a powerful plate-machine of 50 inches diameter to supply sufficient electricity to decompose one grain of water. Althaus, who mentions this fact, and whose work I recommend to you for your studies as probably being the best written on this subject in the English language, says that this charge of the battery, if concentrated in a single spark, would resemble a great flash of lightning, and yet its quantity would be equivalent only to that produced in about five seconds by a single pair of a Grove's battery.

That static electricity can also produce effects at a distance is said to depend on inductive action. You remember that I showed you the action of a piece of amber, if electrified by rubbing, on paper. From the explanation I then gave you, you will know, that when an electrified body is approached to an unelectrified insulated conductor, it decomposes the neutral electricity of the latter, attracting one fluid and repelling the other. As soon, however, as the electrified body is removed, the fluids reunite and become neutralized.

To show inductive action, the electrophorus was invented and improved by Volta. As it is not of great use in medicine, I will simply describe to you its composition. A resinous round

plate is put into a metallic case, having a rim round its edge. Over the whole fits a metallic cover, insulated by a glass handle. When the cake has been charged with negative electricity it exerts its power on the cover, and positive electricity accumulates upon it by inductive action. Upon the principle evinced by the electrophorus, which I cannot described here at length, Holtz and Toepler have built so-called induction machines of great power.

But though static electricity has recently been again introduced into medicine, it will probably never obtain that value which dynamic electricity possesses in disease. Perhaps in the interest of the manufacturers, Toepler's machine has recently been recommended in certain cases, especially such as locomotor ataxia. I have convinced myself of its utter uselessness in this malady—at the most, its effect resembles that of an electrical machine. Let us now turn our attention to galvanism.

In the year 1786 Galvani, who had been dissecting a frog, hung its hind legs by means of a copper wire to an iron fence, wet from a recent rain, and discovered to his surprise contractions of the muscles of the legs. This observation have we to thank for the important discovery of galvanism. Galvani, however, did not understand the value of the rain and that of the fluids in the legs; and it was Volta, who detected that two heterogeneous metals, as copper and zinc, if connected by means of a moistened conductor, will give rise to a current, now termed galvanism or galvanic electricity. And even Volta did not discover that it was the chemical action, which the fluid caused on one or both of the metals, that produced the current. Without chemical action, which disturbs the rest of the molecules of a body, no electricity can be set free. We may take a piece of iron and one of copper, connect them ever so intimately, and immerse them in a solution of caustic potash, and not the least current will show itself, because the caustic potash has no chemical action on either the iron or the copper. The same would happen if we take a plate of gold and one of platinum, and put them in pure nitric acid. Not the most delicate test will reveal a galvanic current. But if we now add a few drops of muriatic acid, a powerful current will be developed, as nitro-muriatic acid causes a strong chemical action on both metals.

Whenever you immerse two heterogeneous metals in a fluid, which has a chemical effect at least on one of them, if not on both, a galvanic current is set up. The metal most affected is called the positive, the one less attacked or none at all the negative, and the + metal determines the direction of the current.

Not all metals are alike good electro-motors, and besides, even if they are capable of generating a large amount of electricity, most will depend upon their arrangement. According to their polarity, a list of the principal motors has been set up. Of these, the first is the most +, the last the most —:

+		
Zinc,	Iron,	Platinum,
Lead,	Copper,	Carbon.
Tin,	Silver,	—
	Gold.	

From this list you will see that zinc and carbon form the most active pair. In zinc and copper, zinc would be the +, copper the — metal; while, for instance, in copper and carbon, copper would be the + and carbon the — metal.

In a galvanic pair the two contrary electricities have no difficulty in uniting through the intermediate fluid, but they therefore possess no great force or intensity. By putting up a great number of pairs we may obtain more force, but it will always have little intensity, though possessing an enormous quantity of electricity, and, therefore, exerting great chemical action.

A voltaic pile is built up as follows: To insulate it a piece of glass is first put down; upon this is laid a copper disc; on the top of this one of zinc. Then follows a piece of porous material of the same shape, and pair after pair may in this manner be added ad libitum. The porous material is soaked in salt-water, though it is better for the purpose of increasing the action to add sulphuric acid to it. As long as a chemical action is going on, a galvanic current will be developed in such a pile. That it is really electricity is proven by its possessing all the characteristic properties of the latter. Any phenomenon caused by an electrical machine may be produced by a galvanic current. The + galvanism will attract its opponent and repel + galvanism; a Leyden jar may be charged by it; a continuous stream of sparks can be seen to pass between two opposite poles; the electrometer indicates the presence of an electrical current; it produces a shock; led into water hydrogen will develop at the —, oxygen at the + pole; it will deflect a magnetized needle, while passing through a piece of soft iron, make the latter magnetic, and if connected by a fine wire of low conductive power it will cause it to become incandescent. Whatever we may achieve, therefore, with a rapid succession of electrical discharges or with an electrical current, we may obtain with the galvanic current.

But the chemical action in a voltaic pile soon stops; within an hour its force is already diminished; and finally, the heterogeneity of the metals becoming destroyed by the decomposition of the fluid, whereby they acquire what is termed polarization, the galvanic current ceases, the new polarization-current counteracting the electric, until the action of the pile is arrested. This is the reason, why the use of the voltaic pile in medicine has been discarded, for for practical purposes physicians need a more constant machine.

Constant batteries have, therefore, been built. They usually have two fluids separated by a porous membrane. The polarity of the metals in these is preserved. Such batteries consist of a metal, which is attacked, and forms the + pole, generally zinc; an attacking acid, usually sulphuric acid; a porous diaphragm; a depolarizing body, as sulphate of copper, and a second metal, not attacked and forming the — pole, usually copper, platinum, or carbon. To prevent polarization and also destruction of the zinc, this is amalgamated with mercury. This amalgamation may be done in various ways. We may add to the fluid, in which the zinc is immersed, bisulphate of mercury, or placing the zinc in diluted sulphuric acid, dip it at once into mercury, or painting it over with a solution of mercury in nitro-muriatic acid by aid of a camel's hair brush. The metals and the fluids with the porous diaphragm are usually kept in a glass jar, or in a vessel made of non-conducting hard rubber, and the whole is then called a galvanic cell—a number of which, as in case of the Leyden jar, where several of them completed the electrical or Leyden battery, form a galvanic battery.

The few hours at my disposal for lectures on electro-therapeutics prevent me from describing minutely the many different constant batteries in existence. Becquerel's, Daniel's, Leclanche's, Smees's, Bunsen's, and Grove's batteries all work on the principle laid down, differing from each other only in the kind of metals and fluids employed, and in their manner of arrangement.

In general the rule holds good, that the feebler the chemical action in a cell, the more constant the battery, but the smaller also the quantity of electricity generated. For medical uses we want quantity; and we employ, therefore, special batteries, as you will later see.

As long as the two metals of a cell are not connected outside by a wire, they are said to form an open circuit; when so connected, the circuit is said to be closed, and the wire is called the conjunctive wire or arch. The electro-motive force in a cell separates the natural electricity of the metals, and the two electrical fluids liberated seek to become neutralized; but as the wires are better conductors than the fluid, they pass along the former, it being the rule of an electrical current from two roads open to it to select the one, offering the least resistance.

The chemical action in a cell is continuous, therefore also the electrical current traversing the wire. In any galvanic battery the current generated by it is continuous, as long as the battery is in action. That does not say, however, that it is constant, for a constant current, though naturally also continuous, can only be derived from a constant battery.

Though in fact a current passes from each of the two metals to the other, we consider only the one passing from the + metal to the — one. By electrolysis of water we can discover the direction of the current, or rather the different poles. Oxygen being given off at the + pole, the copper-wire of that pole will become oxydized, while that of the — pole, where hydrogen is developed, will retain its lustre. The positive pole of a galvanic current is called the anode, the negative the cathode. Metals generating electricity were termed by Faraday electro-motors: electrolytes are chemical compounds, that may be decomposed by electrolysis—the technical term for chemical decomposition effected by electricity—and electrodes (ways of electricity) are the metal ends of conducting wires, from which the current passes into the electrolyte.

When we connect two points of a closed circuit by a wire, a part of the current passes through the latter. Such a current, always feebler, than the main current, is termed a derived current.

The effect noticed in electrolysis differs at the two poles, but the difference depends solely upon the fact mentioned by me, that hydrogen and the bases of all salts pass to the cathode, while oxygen and all acids go to the anode. If we wish, therefore, in the living animal tissue to cause softening and absorption, we make use of the cathode, while if we desire shrinking we employ the anode. This electrolytic effect becomes very apparent in metallic electrodes, which become corroded and thus cause a diminution of the current and increase the resistance, besides assuming the properties of non-conductors. The McIntosh Galvanic and Faradic Battery Company, in Chicago, has manufactured for this reason carbon electrodes, which are not affected by electrolysis.

Let me use this opportunity, gentlemen, to advise you to be careful in your selection of the firm

of which you buy electrical implements. I have often seen young physicians buy apparatus nearly useless, or made in a clumsy manner, or pay exorbitant prices for them, having believed every advertisement they read. I do not doubt there are many excellent firms whom I do not know, but you will rarely meet with one so courteous to physicians, so earnestly striving to manufacture the best, so excellent in workmanship, so reliable in its apparatus, and so reasonable in its prices, as the McIntosh Galvanic and Faradic Battery Company, of Chicago. This battery and these electrodes were made by them; you will observe the rare excellence of the work, and the beautiful working of the battery you will have often occasion to note. The firm is too widely known, and too independent, probably, to care much for any praise, but in recommending it I had specially your interest in view.*

I have to describe another useful instrument called the multiplier. A magnetized needle is deviated from its previous position by an electrical current. A feeble current exerts a scarcely perceptible influence. But by winding the insulated wire frequently around the needle, the action is greatly increased, and a contrivance of this kind is called the multiplier. Du Bois Reymond has constructed a multiplier consisting of 11,000 turns to demonstrate the nervous current, and to show the muscular current he employed one with 24,000 convolutions.

We now come to a subject to which I wish specially to draw your attention—the quantity and intensity of galvanic electricity. The intensity of a continuous current depends upon the quantity of electricity traversing the circuit. The quantity, on the other hand, is proportional to the surface of a galvanic cell and to the degree of affinity existing between the metals and fluids employed. It is the same in all parts of the circuit and of a transverse section of the conducting wire. The wire may be thinner or thicker without influencing the intensity of the current, but if thinner, the density of the current increases, for, as I told you, the density depends upon the extent of surface over which electricity is distributed, the density diminishing with increase of surface; or, mathematically expressed, the density (D) of electricity is equal to the intensity of the current (I) divided by the transverse section of the conducting body (Tr.).

$$D = \frac{I}{Tr.}$$

The two contrary electricities, liberated in a galvanic cell, traverse the conductive wires, striving to become neutralized. But not the whole quantity of electricity developed will arrive at the end, for absolutely perfect conductors do not exist, and the resistance offered by the wires diminishes the intensity of electricity. Prof. Ohm, of Nuremberg, has mathematically investigated these conditions, and established the law that the intensity of a current is directly proportional to the electro-motive force, but inversely proportional to the resistance; or, in other words, the intensity of the current is directly proportional to to the electro-motive force divided by the resistance. But the resistance is a double one, first that which the current has to overcome within the cell, called essential, and that which impedes its passage through the conductive wire, called non-essential resistance. If we express intensity again by I, electro-motive force by F, essential resistance by R^e, and non-essential resistance by R^n, we obtain, according to Ohm's law, the formula:

$$I = \frac{F}{R^e + R^n}$$

If we wish to act upon the skin or the inner organs of a body, we must try to obtain a great amount of quantity, but little force; if it be, however, our intention to employ galvanism as a cautery, we must increase the resistance. The intensity, according to Ohm's law, may be increased or diminished by changing the electro-motive force (F), or the essential (R^e), or the non-essential resistance (R^n). The further the two metals are removed from each other in their polarity the greater becomes the electro-motive force; by increasing the length of the electro-motors and the height of the fluid, we increase R^e; while it is diminished by making the metals thicker and selecting a well-conducting liquid with not too strong chemical action, and the non-essential resistance is lessened by short, thick and excellent conducting wires, and increased by the opposite.

The knowledge of these points is very important. An instrument, called the rheostat, has been invented by which we can regulate the non-essential resistance at will. They all are built upon the principle of introducing a conducting wire into the circuit without otherwise altering the latter. The length of the wire may be varied at will. Siemens's is the best, and for practical purposes Duchenne's answers, the latter simply

*Their advertisement is in this paper. They have also published complete illustrated catalogues, which, as much as I know, they are always willing to send to any physician applying for them. They really merit all said in their favor.

placing a column of water of varying length within the circuit.

We will now proceed to the consideration of electro-magnetism. Arago discovered that if a copper wire, insulated by a silk covering, be coiled round a bar of soft iron, and an electrical current be made to pass through the wire, the soft iron becomes magnetic as long as the current traverses the wire. This magnetism ceases the same instant the current is interrupted. Such magnets are called electro-magnets. Faraday then discovered that a galvanic current can, by induction, develop electrical currents in conducting wires. The following experiment will explain this important discovery:

Two conducting and insulated wires are placed parallel to each other. We will call them A and B. The two poles of a galvanic battery are then connected with the two ends of wire A, while wire B is brought in contact with a multiplier. The moment the connection is made between the wire A and the battery, the magnetized needle shows a deviation, showing the existence of an electrical current in wire B, though the latter has had no communication with the current passing through wire A. The needle soon becomes stationary, proving that the induced current in B was but momentary. But the moment the poles of the battery are removed from wire A, the circuit therefore is opened, the needle again for an instant deviates, registering the fact that once more a current passed, for an instant, through wire B. The multiplier further not only demonstrates the existence of such instantaneous currents, but it also indicates their direction; and it has been found that the current developed on closing the circuit flows in a contrary direction to that by which it was induced, while the current appearing at the reopening of the circuit passes in the same direction.

The intensity of these instantaneous currents can be greatly increased by employing two insulated copper wires of great length, and coiling them round a hollow reel, the convolutions being as near as possible to each other. And if a piece of soft iron be introduced into the hollow of the reel, the intensity can be still more increased, the soft iron becoming magnetic under the influence of the galvanic current, and giving rise to still other currents in the two wires, while a brass tube covering it diminishes the intensity. The piece of soft iron is known under the name of the core. The currents caused by the core are also instantaneous, being produced the moment the iron receives and loses its magnetism. But there are still other currents developed. The first wire, usually thicker and shorter, to lessen the resistance of the battery current, which it conducts, will, if each convolution is very near the other, cause a new current by the action of the convolutions upon each other. These currents are extra-currents; the battery current is called primary; the induced, the secondary current. How the influence is conveyed from the soft iron to the wires, causing in them again another instantaneous current, is not yet known. For practical purposes, it is enough to mention that the polarity of these currents continually changes, so that we can almost not speak of a positive and a negative pole in an electro-magnetic current.

We now come to magneto-electricity. If a permanent steel magnet is approached to one end of an insulated copper wire coiled around it, an instantaneous current is developed, and another, the moment the magnet is again withdrawn. This current is called the magneto-electric current. To continually approach and remove the magnet would be tiresome. Therefore usually an armature of soft iron in the form of a horse-shoe, and surrounded by the insulated wire, is made to turn or rotate before the two poles of a permanent magnet. By each turn of the wheel magnetization and demagnetization sets in, giving each time rise to an instantaneous magneto-electric current.

We have now rapidly passed in review static electricity, galvanism, electro-magnetism, and magneto-electricity. In my last lecture I described to you the electrical machine, to-day I explained to you the main scientific data of dynamic electricity, and the principles which underlie the galvanic battery, the electro-magnetic or Faradic apparatus, and the magneto-electrical machine. I shall now endeavor to describe to you the constant battery, the portable galvanic battery, and the electro-magnetic apparatus, used at the present day in medicine. Of the magneto-electrical machine I cannot tell you more—first, because it is to-day rarely used in medicine, and then there is little or nothing to add to the description already given of it, it simply consisting of an armature of soft iron, round which is coiled insulated copper-wire, and which by the aid of a wheel can be rotated in front of the two poles of a permanent magnet. A person holding the two electrodes connected with the machine will receive a shock each time the armature approaches the poles or is withdrawn from them.

Constant batteries for use in hospitals, clinics, and physicians' offices, usually consist of a large number of cells, 60 to 100, for a battery to be

constant must not have cells in which the chemical action is very powerful, otherwise the positive metal, the fluid and the depolarizing agent, would either have to be frequently removed or the battery cease working, in neither case a very constant affair.

At present the cells of a constant battery usually consist of zinc as + metal and copper as the —. A handful or two of sulphate of copper or blue-stone is thrown into the jar, and the latter then filled with water. Such a battery, known by the name of blue-stone battery, is used by most telegraph companies, and is not only very simple, but also very constant and cheap. About once a year the zincs have to be renewed, the sulphate of copper perhaps three or four times a year, while water has to be added in summer every three weeks, in winter every three months. That is all the attention such a battery needs. The cells are usually put up in the cellar or in a closet, and the conducting wires are led to a more or less elaborate table-apparatus. On a board are two binding-posts, to which the conducting cables of the electrodes are attached. A switch—often two—may be moved to a number of buttons, each button indicating the number of cells with which it is connected. Then there are usually found on such a board a rheostat, to increase if necessary the resistance by any number of Siemens's units, a current-changer, and a so-called rheotome or current-breaker. By the aid of the latter, mostly worked by a clock-work, the galvanic current may be nearly as rapidly interrupted, as is the case with Neef's hammer in a Faradic apparatus.

Of late, portable galvanic batteries have become in vogue, and some are so skillfully made, that in the same box of comparatively small dimensions you find a galvanic battery and an electro-magnetic apparatus combined, as in this here before you, made by the company mentioned. In these portable galvanic batteries, we cannot expect constancy—the space is too small. They are formed, therefore, of so-called intensity or gravity cells, in which to obtain a great electro-motive force; the electro-motors are generally widely apart with regard to their polarity—being zinc and carbon—and in which the fluid is capable of powerful chemical action, consisting usually of sulphuric acid, water, bichromate of potash, and, to prevent polarization of the zinc, as in this battery, of bisulphate of mercury. As the action of these cells would soon cease, if the metals were constantly left in the fluid, a very ingenious arrangememt, as you will notice in this battery, enables the operator in an instant to remove the metals from the fluid, and to replace them just as rapidly, while there is not the least danger of the fluid being spilled. Any number of cells contained in the battery can be easily connected.

A similar cell, called Grinet's cell, after its inventor, is generally employed to set the electro-magnetic apparatus, which you see here, in motion. To complete its description, which I gave you of it a few minutes ago, I must mention one part of it, a rheotome, called Neef's hammer, Dr. Neef, of Frankfort, having invented this most useful appliance. It is self-acting, lasts forever, and if properly constructed admits rapid and slow interruptions of the current. Without it, it would be very difficult to apply electro-magnetism in medicine. It consists of a piece of soft iron, placed near to the coil, one end of it being attached to another piece of metal, while the other end is movable and put in motion by the soft iron of the coil. If the whole hammer does not rest upon a platinum spring, attached to copper, a piece of platinum is fixed to the centre of the hammer, as softer metals would soon be burnt by the electrical sparks. The soft iron of the hammer is connected with one pole of the battery, and the copper of the spring with the other pole. When the two come in contact with each other, the circuit is closed, but then the soft iron of the coil becomes magnetic and affects the hammer, which at once breaks the circuit. The soft iron of the coil loses its magnetism, and the hammer falls back to its previous position. Then the circuit is again closed; the soft iron of the coil once more becomes magnetic, and again attracts the hammer, thus again breaking the circuit, losing its magnetism, and releasing the hammer. At each interruption a spark passes between the two pieces of platinum, and in time the latter becomes oxidized, and should be cleansed.

A screw regulates the movements of the spring, and we may thus obtain slow or rapid interruption, not without value in disease. The apparatus before you, made by the McIntosh Company, has several advantages not possessed by others, besides its excellent working qualities. First you have a galvanic battery and an electro-magnetic apparatus combined in one box easily carried. Then the electro-motors can be taken out of the fluid in an instant, and may be as rapidly replaced, thus insuring a saving, as there is no loss of electro-motive force, when the machine is not in action. Of great value to the physician also is the fact that you may use any part of the apparatus and any number of cells, without putting the others in action. Lastly, you may connect one

or all the cells with the Faradic battery, which is very important, as you will later observe, in cases of asphyxia from drowning or poisoning.

In my next lecture I shall explain and show you the various electrodes used, and speak of the practical application of the different varieties of electricity in medicine.

COMMUNICATIONS.

THERAPEUTICAL REMARKS ON HAMAMELIS VIRGINICA.

BY J. R. BLACK, M. D.,

Of Newark, Ohio.

Thirty years ago, in the treatment of hemorrhages, not to have prescribed the acetate of lead would have been deemed an unpardonable omission. Ergot was not then mentioned in such disorders—save in those of uterine origin, and on account of its acknowledged power to produce uterine contraction. Now, not to give the latter agent in hemorrhages, wherever their source, is to lay one's self open to the charge of the sin of omission, such as pertained to the sugar of lead three decades ago. What has produced this revolution in practice? Mainly, if not wholly, the power of ergot to bring about a contracted state of the arterioles.

Granting this quality to be experimentally demonstrated, affecting all the minute arterial vascular tissues of the body alike, it does not follow that the blood pressure at some eroded or ruptured point is thereby diminished. If the arteriole contraction were confined to some special organ, then we could understand that a lessened pressure in such a part would imply a heightened pressure in the other organs for which the agent had no elective affinity. In this way the turgescence of one organ could be lowered, and the outflow of blood diminished. But unfortunately ergot has no such elective affinity; it affects the arterioles of the body everywhere alike. At least this is the theory which guides its administration, be the hemorrhage in the central, pulmonary, renal, intestinal, or uterine tissues. With the arteriole calibre and capacity thus universally diminished, the quantity of blood in the body the same, and the heart acting with its usual force, it ensues, according to hydrostatic law, that the pressure in the containing vessels must be enhanced. This is one of several considerations that has led me to doubt the styptic power of ergot, and so far as the *post hoc ergo propter hoc* statements go, unless one knows that the observer is skeptically alert to its fallacies, they are far from being entitled to unquestioning acceptance. For, is not the curative power of all the prominent articles of the materia medica made certain by just such testimony? The young practitioner has his eyes painfully opened to the fact that the assurances of controlling power over disease of this and that substance very often grievously disappoint.

I have been led to these remarks, in connection with my subject, on account of the extreme favor with which the supposed controlling power of ergot over hemorrhages has been received. Judging by the encomiums of the press, its applications to disease are nearly protean. It has well nigh driven the use of astringents for the control of hemorrhages into outer darkness; and its power over unstriped muscular fibre, and hence, of diminished blood afflux to an inflamed part, has led many to rely upon it in the treatment of phlegmasias everywhere. Indeed, in the management of any disease in which a diminution of blood supply would seem to be desirable—and such cases are innumerable—it would not be difficult for the logician to prove its applications panaceal.

Hamamelis Virginica has been acknowledged as an astringent of no low-grade value ever since made known to Anglo-Americans by the Indians. Exaggerated statements of its virtues by irregular practitioners, and by the vulgar, instead of bringing it into favor, have only served to throw around it the odium of being a great remedy among the crude and the ignorant. But though a remedy—like a man—often suffers in reputation by the company in which it is found, none the less may excellent qualities be discerned by the unprejudiced observer amid such surroundings.

It has been with me, as no doubt with many others, a rule of action, that when the remedy of main reliance in the treatment of a disease proves on trial after trial unsatisfactory, not to rest until a better one is found—one that will fulfill all reasonable objects. It was in the search for such a remedy, as a local application for hemorrhoids, that I was led, some twelve years ago, to try the hamamelis. Palliatives in this disorder are frequently called for by those who firmly refuse all surgical interferences. After having tried almost every remedy mentioned by respectable authority for the above purpose, with very unsatisfactory results, I was induced to give the extract of witch-hazel a trial.

The reports almost invariably were so favorable that the desideratum seemed to be at last attained.

Its application not only lessened, but often wholly checked the bleeding, besides assuaging the suffering to a notable degree. Of course, no benefit is looked for where the vessels become strangulated and inflamed; but when they can be readily returned, well anointed with the hamamelis, benefit is quickly perceptible. The pain and soreness are soon mitigated, and a striking diminution of their size is ere long apparent. Neither this application nor any other is of much benefit unless aggravating causes are avoided, such as very dry and long-retained fæces, diarrhæa, and obstructed or turgid states of the portal circulation. With these sources of aggravation removed, the fluid extract of hamamelis, with an equal portion of glycerine, and a little starch or other excipient, for convenience of application, well smeared over the piles, and these returned, will do all, and more than any other application. A lady who had been a great sufferer from a large cluster of bleeding piles for more than twenty years—now a little better, then worse—and who had tried every remedy told her, said that no application had equaled in relief the one I gave her. Of course, it only afforded, in such a severe and chronic case, decided mitigation, but it led her trustfully to submit to my judgment, and get rid of the trouble permanently by the hypodermic use of a solution of persulphate of iron, which she did.

In less aggravated or long-standing cases, readily reducible, or when blind and bleeding, the application each day of the hamamelis will often effect what seems to be a permanent cure, or at least indefinite absence of all the symptoms of the disorder.

The astringent, soothing, and, I may say, anodyne effect of the hamamelis in irritated piles, led me to use it in certain forms of diarrhœa. Without entering upon tedious details, I will at once relate two typical cases in which its administration was followed by all and even more than the benefits anticipated.

The wife of a minister while temporarily sojourning in Florida, on account of a limited tubercular deposit of left lung, began to suffer from diarrhœa. This grew worse and worse, notwithstanding the remedies employed on the recommendation of several physicians. Prostration became so great that she was scarcely able to stand, and in despair her return, in order to die at home, was undertaken. I found her extremely exhausted, and the evacuations occurring from six to ten times a day, copious, and of the appearance usual during the last stage of tuberculosis. Though her diet had been rigorous, digestion was obviously imperfect. She had no pain, and as her stomach was peculiarly sensitive to active medicines and to opiates, I ordered extract hamamelis fluidum and glycerine, equal parts, to be taken in dessertspoonful doses four or six times a day, according to the frequency of the stools. The glycerine was added on account of its anti-fermentative quality, and to mollify the taste of the hamamelis. The diet remained unchanged, composed mainly of milk and eggs. Almost after the first dose a beneficial effect was apparent; and in a little more than a week the dejections were under proper control. Symptoms of relapse, which occurred on several occasions, were readily subdued by fresh recourse to the medicine, and this was kept up until all signs of the diarrhœa disappeared. Meanwhile the patient, Mrs. O., gained very decidedly in appetite, digestion, strength, and health for three months, or until a sudden and severe attack of hœmoptysis put an end to her life in less than ten minutes.

A middle-aged farmer, 6 feet 6 inches in height, and known as Giant Jones, had been a sufferer during the summer months by diarrhœa for eighteen successive years, or ever since he left the army. For several years after his discharge from the service he had done the part of giant for a traveling show—a mode of life so inimical to his health that he had to abandon it. Nevertheless, his summer disability as a farmer continued to recur, and to such an extent as to incapacitate him from manual labor. Throughout the colder months of the year he was free from the complaint, but with the regularity of the June heat did his bowel disturbance appear. He consulted me May, 1882, with the remark that it was probably useless, as no remedy so far had done him any good, and his medical advisers had told him his disease was incurable. With little faith and some hesitation he consented to give my remedy for such a trouble a trial. This was the same combination above given, to be taken *pro re nata* before meals. Three months later, to my gratification, he reported the medicine to have kept the diarrhœa under complete control, so much so that he was able for the first season in many years to attend to his harvest labors.

It will be seen that the cases in which it is appropriate are those of atonic and colliquative character. Inflammatory states of the intestines with soreness and pressure tenderness are not presumably benefited by it; at least, I have not used it in such cases.

The value of the hamamelis in hemoptysis is at

least as well assured to me as ever ergot has been. The evidence here of causal relation is however beset with difficulties. The disease is nearly always a brief and self-limited one, and more than one agent is usually employed, so that it is difficult to say to what one is chiefly due the abatement.

It is usual, for instance, to employ revulsives—hot foot-baths and an opiate, to quiet the cough. The following case has thrown a point or two of light on this topic, as the blood expectoration had become somewhat chronic. It was that of a large-framed man, in moderate flesh, and by occupation a glass blower. He had been under the care of another physician, who had kept him continuously under full doses of ergot for three days, but without any impression upon the sanguineous expectoration. This was not his first attack; he was not excited. The quantity at no time of the attack had been large, and it was of bright red hue. A few doses of morphia were prescribed to blunt bronchial irritability, and at the same time drachm doses of the hamamelis extract were ordered every three hours until the color disappeared. The effect was almost immediate, and so far he has not had a like recurrence. Possibly the opiate may have had as much to do with the arrest of the hemoptysis as the hamamelis. Of this, the reader can form his own opinion.

The thought may occur, granting the hamamelis to be an active astringent, how, by its administration per orem, does it produce a constringent effect upon the bronchial tissues? The answer is sufficiently obvious—it acts according to the principle that certain agents manifest their affinitive energy only upon certain structures of the body. Administer morphine hypodermically or otherwise, and its potential affinities are spent upon nervous tissue, and the secretive activity of the mucous membranes. If there be doubt that the hamamelis acts as a sedative upon bronchial secretion, a simple and allowable experiment will remove it, to wit: admidminister to one suffering from bronchial catarrh several doses of the hamamelis, and a diminishing and tightening effect upon bronchial secretion will be sufficiently obvious.

—The late Professor Filippo Pacini has left records of a series of original microscopic observations on cholera, which are in course of publication by Vallardi, of Milan, under the editorship of Dr. Aurelio Bianchi. It will be very interesting to compare with Professor Koch's, the observations of one so eminent in histology as the discoverer of the Pacinian bodies.

Hospital Reports.

NEW YORK HOSPITAL.

CLINIC OF PROF. WILLIAM H. DRAPER, M. D.

Reported by W. H. Seelye, A. M., M. D.

Pleuritic Abscess.

Gentlemen: In the case of the woman whom you saw at our last meeting (page 344), and upon whom I made the probable diagnosis of gangrene of the lung, the fetid expectorations have since subsided and the physical signs have changed somewhat, so that when I examined her yesterday I was constrained to modify my first opinion and to conclude that it was really a pleuritic abscess or a circumscribed empyema. I found the physical signs circumscribed, and such as you would naturally get from the entrance of air into a confined portion of the pleural cavity, namely, cavernous respiration and voice. And there were abundant signs of a circumscribed cavity surrounded by healthy pleura. The expectoration had also pretty much subsided, and there was no fever. But last night she had another attack of coughing which was followed by a copious expectoration of more of the same fetid putrescent material as before. This was probably due to the fact that there had taken place a closure of the opening of the cavity into the bronchial tube, from contraction of the lung tissue, after the last expectoration; and now after the cavity had again become filled and distended, the passage was reopened during a fit of coughing, and the contents were again expectorated. This seems to be a sort of valvular opening, which retains the fluid in the cavity of the abscess until its overdistention causes it to give way. That the abscess is pleuritic in its origin is made more probable from the fact that the expectorated matter has been examined microscopically, and no evidences of any broken-down lung tissue have been discovered.

So the probable explanation of it all is that she at some time had a pleurisy, which was circumscribed at the point of a gangrenous patch upon the surface of the lung, and as a result, the lung became glued to the costal wall at this point and for a certain area around, and as the gangrenous process went on it hollowed out a cavity which was separated from the main pleural cavity by walls of new false membrane. The destructive process, therefore, went on in the lung tissue until an opening was made into the bronchial tubes, and air was thus allowed to enter this cavity. And through this passage the cavity emptied itself of its contents, and then it contracted again as far as its fibrous walls would allow it to do; and the passage thus became closed again, to be reopened when the cavity should become refilled and distended. And it is probable that this valvular opening will finally give way completely, and thus leave a permanent opening into the cavity, which will result in the formation of a limited pneumo-hydrothorax.

—Sir Erasmus Wilson's great wealth is said to have been acquired principally through fortunate investments in gas and other London stock.

MEDICAL SOCIETIES.

PHILADELPHIA NEUROLOGICAL SOCIETY.

A stated meeting of the Society was held Monday evening, March 24, the President, Dr. S. Weir Mitchell, in the chair. Dr. Mitchell made some introductory remarks, as follows, on

The Objects and Duties of a Neurological Society.

I learned but four days ago that I must meet you to-night, for the first time, as your presiding officer. I thank you for the selection with feelings which are not altogether made up of pure gratitude.

The time will come, I hope, to all of you, when you will be so weighted with professlonal cares that the prospect of even an agreeable duty will appear to you as this one does to-night to me. For while it must be a pleasure to preside over a set of thoughtful men, united by the bonds of a common sympathy, the fact that this involves new duties is one from which I cannot escape. I shall begin by saying that this year, especially, I shall be absent often and for long periods from your meetings, and I have so stated before consenting to serve with and for you.

My own view of the duties of a president involves much more than merely to preside at meetings. He may do much by exciting and guiding debate, by arranging to secure papers, and by urging, and, in a measure, influencing research.

He also has certain duties as a critic, and, as critical duties are most pleasantly fulfilled when there is as yet nothing to criticise, I shall begin mine by saying briefly what I think this Society ought to be, what its individual members should seek to become, and what they ought to avoid being.

This brings up a question as to why medical men organize societies or join them. When there were no journals, these meetings had an obvious purpose, in the needful relations they established. They were to knowledge what the old exchanges were as regarded commerce. But now we have every new thing thrust at us in weeklies which we scarce find time to skim. What, then, is the need for societies? Except as in the case of our College of Physicians, they cannot sustain libraries, or act on public opinion, or nourish pleasant fellowship. If they have a real reason for existence it is in the fact that they bring together in groups men having common interests, so that these men stimulate one another by example and criticism, and by the sympathy arising out of unity of pursuit.

It is never very well to be absolutely isolated to your pursuits. I myself can well recall how little interest I found in this city in physiology when I first began to work at it practically. It was a real and serious discouragement. The reverse of this condition of intellectual loneliness has its use. All men do more and better work amidst the competition of other workers. Some men can do no work unstirred by the ferment of companionship in like efforts.

In these subtle agencies lie the value of associations like ours—in the examples they offer, the discipline they teach, the criticism they afford, the sympathy they evolve. The advantage of small societies is that they secure definiteness of aim, and that we hear only what interests all who are present.

The danger of such bodies is that of narrowness, and is the risk to which all persons pursuing specialties are themselves liable. It is to be avoided by not limiting your thoughts to what you discuss in this hall, and by keeping up that sympathetic wide-awakefulness which should preserve for you an interest, and a watchful one, concerning the work done in all other lines of professional progress. Neurologists are least of all liable to fail in this direction; their special study is too broad, and their exposure to this form of degeneration only comparative. It is the small specialties which suffer most, and for that reason I would allow no one to practice otology or ophthalmology alone, who had not had ten years of general practice. Nearly every one in such a society as this should be, is capable of entering debate with something worth contributing; whilst in large collections of men a few members only debate a subject, and it may chance to have no relation to the active, practical life of the mass of those present. We shall hope, then, to see here enough of debate; unsparing yet courteous criticism; a desire to talk only when there is something to say, and a highly cultivated tendency to sit down when that something has been said. The habit of repetition, of unthoughtful comment, and unfruitful criticism, shall have no place here.

Let me say a word as to papers. No doubt we shall, in our existence as a society, hear some papers which, to use an Irish phrase, would have been more interesting if they had never come into being. As to these future, and, therefore, defenceless, victims of unjust attack, a word in advance. When a man presents an essay here or elsewhere, he should remember that, for a time, he has a group of people at his mercy, tied to the stake of patience by the bonds of social courtesies. It is his duty to have something to say, and then to say it as briefly as possible. There is no literary praise one ought to value like that of condensation. When it is not possible to make brief reports as to cases, it is advisable, for society purposes, to cut them short by reasonable omissions.

Single cases, or those with clinical personal illustrations, are more desirable here than in larger societies; but I am apt to think little of the future of young men who are in the habit of reporting single cases. Let us have these only when they possess real value, or are unusual enough to evoke fresh thought and discussion. The patience which selects a subject and for years works at it, waiting for cases, and maturely considering them, seems to be rare in this country, despite of the sure rewards which await its labor. Let us hope to welcome here many such contributions.

Especially may I hope to see and hear much of therapeutics. In the numberless queries for debate at the International Medical Association at Copenhagen I saw not one therapeutic question; and there is a strong feeling in America that in England and this country therapeutics are more sincerely studied and more constantly kept in view by the best physicians than in Germany and France. This is possibly true, and may be owing to the growth of doubt engendered by the certain-

ties of purely scientific work in regard to the insecurity of therapeutic decisions. It is too true that direct therapeutics often owe little to the great masters in neural research; but it is not always true, and from some of the most scientific the art of healing has gained directly, as well as indirectly, through improvements in diagnosis, much that is of priceless value.

Here we must never cease to remember that our ultimate object is to relieve from pain and disability, and to save from death. Let us, therefore, keep constantly in view this matter of therapeutics. Let us see all new instruments, consider new drugs, receive hints from our laboratories, and perhaps have deliberate debates or conferences given over to some single agent or to the treatment of some one disease, with the sharpest criticism upon supposed results.

As an example, I would like well to learn whether all of you accept the present views of the value of strychnia, and the theory of its action, and to hear your evidence thereon.

Not less would I like such a conference with some surgeons added on the value of ovariotomy as a therapeutic measure in insanity. I mention these as illustrations; but your ideas as to exclusive diets in nervous maladies would be as interesting.

Regarding you as a set of men grouped for a certain kind of work, something more may be said.

You ought to appoint committees now and then to collect material and suggest work, or to deal with certain questions, such as the best means of determining the amount of sensation present in a part. As to this, there are, except Weber's plan, which fails of value save for slight cases, no generally adopted and trustworthy methods. In the same direction, there is good work to be done by collective labor in determining, through the effect of nerve sections, the true distribution of nerves to the skin. I might easily multiply such questions, and some of them would have a peculiar value, relative to climate and seasons in America; and of these would be the relation of rheumatism to chorea, and the statistics of cerebral apoplexy relative to temperature.

It does not seem to me that it will be ever wise to attempt separate publication of proceedings. If there be any surplus of money, it may go towards aiding laboratory work, or to completing for our college library its very imperfect collection of books on neural maladies.

With these hints, and with my renewed thanks, I enter with you upon your society life, in the hope that it may be long, vigorous and interesting.

Spinal Accessory Spasm.

Dr. Sinkler presented a patient suffering from spinal accessory spasm, and read the following history of the case:

Anna B. K., aged forty-one years, single. Has never enjoyed very good health, but has had no special illness. She has had neuralgic headaches for several years, and about three years ago had rheumatism in the left shoulder. In the spring of 1882 she noticed that, while sitting sewing, her head would turn toward the right shoulder. She could control the movement at first, if she directed her attention to it; but it soon began to be worse, and less under the influence of her will. In June or July, 1882, she became unable to restrain the movements of her head. There was no pain in the neck or head, but she became nervous and irritable. There was a sense of discomfort on the top of her head. The use of her eyes seemed to make the movements more troublesome. Her general health has been fairly good, the appetite poor, and she has worried greatly. She was under Dr. Sinkler's care, at the Infirmary for Nervous Diseases, for several weeks in the spring of 1883, and various remedies were used. Galvanism and static electricity were faithfully applied, as well as massage. Hypodermics of atropia were given in the muscle affected, and the bromides and gelsemium were administered. There was no benefit apparent from the treatment.

The patient was re-admitted to the hospital a few days ago, and her present condition is as follows: She is thin and of spare build. She usually sits resting the right side of the face against her hand, to check the movements. The head is rotated to the right every few seconds, and turns more frequently if she is excited or nervous. The chin is turned strongly to the right, and the head inclined slightly in the same direction. The head is not drawn back. After being held in this position for about two seconds, the spasm relaxes and the head becomes straight. She can keep the head quiet by resting it against some object, and sometimes will rest her head against the wall for this purpose. The left sterno-cleido-mastoid muscle is markedly hypertrophied and is tender to handle. Pressure over the spinal accessory nerve does not arrest the spasm; it rather brings it on. There is pain at the insertion of the right sterno-mastoid muscle, but not in the left muscle. No contraction takes place in the trapezius muscle, and it is not hypertrophied. The voice is unchanged, and there is no laryngeal spasm. The urine contains neither albumen nor sugar.

Dr. Harlan, one of the surgeons at Wills Eye Hospital, kindly examined the patient's eyes, and reported that the optic discs were nearly or quite normal. Vision R. $\frac{20}{30}$, L. $\frac{20}{40}$.

The patient is nervous and inclined to be hysterical.

Dr. Dercum mentioned a case which was relieved by nitrite of amyl. He said, however, that the case was specific in nature. Iodide of potassium was afterwards given, with satisfactory results.

Dr. Mitchell believed that gelsemium, in exceedingly large doses, was the best remedy for such cases.

The Primitive Fissures of the Fœtal Brain.

Dr. A. J. Parker made some remarks on *the primitive fissures of the fœtal brain*. These fissures appear very early in fœtal life. He did not believe, with some, that they were due to hardening agents, as alcohol and chloride of zinc. He found that these fissures had certain mathematical relations to the brain itself. He regarded them as due to pressure just as brain flexure is due to pressure. The brain grows under pressure; it tends to grow more rapidly than the skull. Fissures represent retarded growth.

Specimens Showing the Lesions of Snake Venom.

The President invited Dr. Guy Hinsdale to exhibit to the Society some mounted specimens showing the lesions of snake venom.

The specimens were obtained in the experimental laboratory of Drs. Mitchell and Reichert, in the University of Pennsylvania, and illustrated the ecchymoses seen in the lungs of rabbits into whose jugular veins venom had been injected. The appearances are striking, the blotches of extravasation being in marked contrast with the surrounding lung tissue. The colors have been preserved by filling the large cells with a fluid composed as follows:

Glycerine,	Oss.
Dense solution gum arabic,	Oj.
Saturated solution acetate of potash,	Oiss.

The cells are made by cementing to a square piece of plate-glass a rubber ring, five inches high and five broad, covering the cell, when filled with the fluid, with a round cover-glass. These cells are four inches in diameter. The cement used is known as "Van Stan's Stratena," and being made with acetic acid, is not affected by the fluid of the cell. Before the rubber ring is fastened to the glass, a triangular cork is cut in it, at two places, so that if the fluid becomes discolored, as in mounting specimens too quickly, the original fluid may be drained away and fresh fluid supplied. Large hypodermic needles and a syringe are of use in this operation. Air bubbles may also be removed in this way. The specimens exhibited have been mounted for only one month, but they are apparently as fresh as ever.

The eight specimens exhibited the lesions of the pure venom of the rattlesnake, the lesions of the three globulins, and the peptone which compose the poison.

EDITORIAL DEPARTMENT.

PERISCOPE.

Old and New Views on Medical Science.

We abstract the following from the opening address in the section of medicine (*Brit. Med. Ass.*), by Dr. James W. T. Smith:

During the last quarter of a century our general ideas have materially changed in regard to disease. Many affections which were then looked upon as of the gravest character have now come to be regarded with much less apprehension. It is not so very many years since heart disease was considered a most dangerous if not inevitably fatal affection. The revelation of a cardiac murmur by the stethoscope was like a sentence of death to the patient; and the facilities which this instrument afforded for detecting these lesions, at a time when their importance was greatly exaggerated, must have revealed to many that they were suffering from a disease, of the existence of which they might otherwise have lived and died in happy ignorance. It may indeed be inferred that the anxiety such knowledge gave rise to must often have been more fatal to the patient than the disease itself; for we have now learned that confirmed valvular disease is far less fatal than was supposed, and that the frequency of sudden death from this lesion has been unduly overrated. In the examination of hospital and other patients, we frequently discover a valvular lesion, which has never given any indications of its presence, and which years after will be found unchanged. It is, in fact, a matter of common observation, that persons affected with such lesions will reach the usual term of human life, unconscious of their ailment. In life assurance cases, no doubt, healthy lives are annually declined, as it may be assumed that a cardiac murmur would be looked upon as a disqualification. But even acute cases of heart disease, now that we no longer contend against them with the weapons we formerly used, are found to be far less fatal than was at one time supposed. It is not only in reference to cardiac disease that our opinions have changed; a more matured experience and a more judicious system of treatment have enabled us to entertain a more favorable opinion of rheumatic fever, of pulmonary consumption, and other diseases.

Our views have also changed with regard to many acute diseases. We do not often find nor expect to find acute inflammations occurring in healthy persons. The numerous ailments whose names end in *itis*, are rarely met with in practice as primary diseases, except when supervening upon morbid changes which have been at work often for a long time before. In pericarditis we look for the poison of rheumatic fever or Bright's disease; in peritonitis we do not rest satisfied with attributing the attack to cold, but look for some of those pre-existing lesions which morbid anatomy has taught us to expect. It may be said that acute pulmonary inflammations, the result of exposure, are well-marked exceptions, occurring as they do in persons apparently healthy, but even in these there is probably a condition of health below the normal standard. Daily experience teaches us that, except in fever and contagious affections, we rarely see the beginnings of disease, and that acute inflammations are generally but the inevitable sequel of causes which have been in slow and silent operation long before.

Our prognosis in disease is still very imperfect, and there is much room for improvement in that department. The subject is one of much difficulty. The chances of life and death are often apparently so equal that it is impossible to predict the issue, yet there is no question of more importance to the patient and his friends, and none we shall be so pressed to answer. They naturally think we should be able to tell them what is curable and what is not. Experience will help us to some extent, but it may deceive as well as assist us. Our diagnosis may be complete, we may map out accurately the extent and limits of the disease, but experience cannot reveal to us that unknown quantity—the vital power within the patient to resist the destructive influences at

work. Referring to the backward state of prognosis, a late eminent physician said "he thought it remarkable how deficient medical literature was in a careful record of well authenticated cases illustrating the possible duration of various anatomical lesions, and how far they were compatible with a fair amount of health. It is to those of our members engaged in family practice that we must look for assistance in these matters. In hospital and consulting practice, we see mainly the termination of disease, and the most erroneous conclusions in reference to prognosis have frequently been drawn from so limited an area of observation." But it is obvious that a large number of such cases would be required, before we could obtain satisfactory results in this department.

Our knowledge of therapeutics has not advanced in equal proportion with other branches of medical science. It is the department in which we know least. The modes of action of many medicines are a labyrinth to which we have no clue. To investigate their actions and to obtain a knowledge of their influence on disease are matters of great difficulty. The action of many is imperfectly known, and it may differ much in individuals. It is very difficult to estimate correctly what influence a medicine has really had in producing the changes which have occurred after its administration, for we know that many diseases will get well if left to themselves. Repeated trials and careful observation can alone determine this.

Perhaps there is no point on which members of our profession so frequently deceive themselves as on that of the effect of new medicines, and it must be admitted that many of the communications which appear in our journals upon this subject will not bear the test of experience. Such statements should be received with great hesitation, except when they come from those who, by careful physiological experiment, are entitled to speak on the subject. Another hindrance to progress is this: that when a medicine has been ascertained to have a decided effect in a particular class of affections, there is a tendency to urge its employment and vaunt its usefulness in diseases over which it has no influence whatever; of this tendency the bromide of potassium is a good instance, that excellent but ill-used drug having been recommended in nearly half the ills which flesh is heir to.

New suggestions of treatment, and the wonderful effects of new medicines, put forth without substantial test, excite only distrust and disappointment in those who act on them, and add to the number of those who are already skeptical about the use of any medicine.

A disbelief in the efficacy of all drugs is, however, as unreasonable as an unlimited faith in their powers. We possess several which have been proved to have a definite action on which we can rely, and their number is being slowly added to. The discovery of salicylic acid has changed the whole treatment of rheumatism, and is a strong incentive to further therapeutic investigation.

After all, the practice of medicine is ultimately the practical application of therapeutic agents, and it is in the careful study of these that some of the greatest victories are to be gained by the coming race. But our progress must necessarily be slow, and we must take care lest the structures we build on our way prove only to be sand-castles.

Diphtheria.

In the *St. Louis Courier of Medicine*, June, 1884, Dr. S. Murdoch thus writes:

Many look upon diphtheria as a new disease, and we are constantly asked if it is not entirely new to the profession. We answer, *no*. Diphtheria has been known to the profession through all the ages, and was described by some of the earliest writers on medicine, hence cannot be numbered among that class of diseases peculiar to this cycle. When the ancient Semitic nations reigned supreme upon the earth and Sanscrit was the spoken language in the cultivated nations, far before the days of Hippocrates, an unknown writer gave a description of a throat disease which could be nothing less than diphtheria. He says: "It is characterized by an increase of phlegm and blood, causing swelling in the throat, severe panting and pain, destroying the vital organs and is incurable." Hippocrates himself must have known of the disease, as he often makes references to what could be nothing else than a violent form of diphtheria.

Areteus, in speaking of what he calls "Syriac ulcer," gives us an account of a malady which no physician of to-day would doubt to be diphtheria. He calls it "a large swelling in the throat, which is considered very fatal," and says, "if it extends rapidly to the chest through the wind-pipe, the patient dies on that same day of suffocation" (diphtheritic croup). Considering how vague in comparison to this is the description of other diseases known to have existed in those times, we must admit that the disease was well known and greatly feared in all the earliest ages. In fact, the evidence seems to be as positive in this case as it is that Cæsar had ague when he was in Spain, when Cassius says: "When the fit was on him I did mark how he did shake."

Thus we can trace the steps of this disease through the different periods of time, during which mention is made of malignant sore throat, membranous sore throat, the parchment patch in the throat, catarrhal sore throat, bilious sore throat, and other similar affections, by careful observers, all of which comparisons clearly indicate this dreaded disease. Yet it was not until the beginning of the seventeenth century that we find diphtheria as such clearly recognized and its peculiarities described. In 1611, Villa Real says, he has seen patients in whom a white matter formed in the fauces, gullet, and throat, which being removed, was tough, leathery, and elastic. Not long after, several epidemics of the disease occurred in Italy and Sicily. These afforded the profession abundant material for study, and the characteristics of the disease were clearly set forth by some of the writers. The English physicians called it "croops;" the Spanish, "garrotillo," while the French eventually settled on the name of "diphtheria, or parchment membrane." These facts are sufficient to put forever at rest the fallacy that it is a new disease. It is as old as small-pox, scarlet fever, measles, or typhoid fever,

that is, as old as man himself, no doubt; and is considered new only by those who are unacquainted with the medical history of the past. That diphtheria ever originated *de novo* is very hard to believe. It may be heresy to deny its sporadic nature, and I may be called a fossil because I deny spontaneity even in diphtheria; but still I hold to the old belief that everything must bring forth fruit after its own kind, and that diphtheria is the product of a contagion, a virus, or an organism which comes *from* diphtheria. If you ask how do you account for the solitary cases, I respond with the query, how do you account for solitary cases of small-pox, or measles, or scarlet fever? Or, how do you account for cockle-burr in a newly-plowed field, or mildew in a room kept clean for years, or infusoria in the cup of water set in the open air in summer; science so far has even failed to explain why we are not as liable to take small-pox, measles, mumps, etc., the second time as the first, yet we all know it to be a fact that we are not. The manner of communicating disease has also been a source of much speculation; yet we recognize the fact that diseases of like nature spring up in different parts of the country at the same time in isolated places, which when once started appear to be communicated from one to another.

In my private practice this fall and winter I have treated seventy-eight cases that I term catarrhal diphtheria, recognized first by headache, tongue light yellow or brown, velum slightly irritated, pulse 96 almost invariably, temperature 99½°, respiration 22: second, tonsils enlarged, one or both showing, sometimes, snow-white specks on the surface, at other times, yellow specks rather under the mucous membrane. I would also state that the breath is much like that in nasal catarrh, and urine shows albumen. The difficulty continues for eight days, gradually getting better, or on the eighth day takes on an aggravated form, when the neck will swell, breathing becomes difficult, and in some cases pus will be discharged—generally from the thyroid gland, and if not careful you will mistake the disease for quinsy. In some cases they will swallow with their eyes staring open, as in quinsy, but mostly by shutting the eyes tightly and shrugging the shoulders as in malignant diphtheria. I believe diphtheria in its various forms is much more prevalent than the average practitioner imagines. I further believe that if it were recognized and treated more generally as I have indicated, as diphtheria in some of its forms, there would be fewer deaths. As for treatment, I would state that I have long since abandoned all swabs, and the use of tincture of iron, or iron in any of its forms, believing it to be one of the most mischievous medicines ever given in this disease, and depend principally upon chlorine mixtures and supportive treatment.

Antipyretic and Antiseptic Treatment of Acute Infectious Diseases.

Before the late International Medical Congress, Professor Liebermeister (Tübingen) read a paper on the antipyretic treatment of acute infectious diseases. The following propositions were laid down in this paper:

1. In many cases of febrile diseases, the increase of temperature constitutes a source of danger to the patients.

2. In such cases, it becomes the task of the physician to combat the rise of temperature by appropriate means.

3. The direct withdrawal of heat by cooling baths forms the foundation of antipyretic treatment.

4. In many cases, the use of antipyretic medicines is also advantageous.

Dr. Bouchard (Paris) read a paper on the antiseptic treatment of these diseases, and Dr. Warfwinge (Stockholm) followed on the same subject. Dr. Warfwinge wished—founding his remarks on a large number of cases of acute infectious diseases, as exanthematous typhus (2,239 cases), typhoid fever (908), scarlatina (243), pneumonia (1,096), etc., treated by himself in the hospitals at Stockholm—to show that, in fevers, increase of temperature could not, as was very generally admitted, constitute the essence of the fever; that, in the acute infectious diseases, this increase furnished an important symptom, in harmony, it was true, up to a certain point, with the violence of the infection, but that it did not at the same time possess such importance as to require its being combated by all means at command; that, consequently, the lowering of the temperature should not be the chief object in the treatment of these diseases. It was, besides, impossible to bring about, in this regard, a sensible reduction by means of cold baths, unless they were employed time after time, seeing that the production, and consequently its amount in the body, followed with equal steps its loss. It was therefore more rational to use antipyretic remedies, which brought about more surely the reduction of temperature, and did that by reducing at the same time the production of heat. As in the case of infectious diseases, the presence of lower organisms as carriers of the infection might doubtless be generally admitted with certainty; it could be no more doubtful that it was the degree, more or less pronounced, of this infection which determined the greater or less gravity of the symptoms, and, among others, the increase of the temperature; whence it came to be more rational to attack the virus itself, and to replace the symptomatic antipyretic treatment by a causal antiseptic treatment. It was also a perfectly well known fact that remedies employed as antipyretics possessed antiseptic properties; and it was more than probable that it was due to their paralyzing action on the sources of the fever that the lowering of the temperature was due. The state of concentration in which the remedies mentioned were incorporated with the organism, too feeble, it was true, to destroy the bacteria, was probably sufficient to arrest transitorily their formation, to prevent their reproduction, and to give the organism time to eliminate them. Just as, in the cases having a successful issue which had been treated on the expectant plan, the bacteria had finally died out probably by the action of their own products, so, it ought to be possible to paralyze their vital activity by means of suitable medicines. The discovery of like antiseptics by experience would consequently be an important contribution to medical science. It was known that many reme-

dies had already been proved to possess a highly curative power in the case of certain infectious diseases—as, for example, quinine in intermittent fevers, salicylic acid in acute articular rheumatism. He (Dr. Warfwinge) had already tried to show (*Nordiskt Med. Arkiv*, B. xv.), that progressive pernicious anæmia, leukæmia, and pseudo-leukæmia were very probably infectious diseases, generally chronic, but sometimes acute; and that arsenic was altogether as specific a remedy in their case as were mercury and iodide of potassium in syphilis, although, like these, it was not quite infallible. In about forty cases of whooping-cough, he employed alum (about 1.3 gramme a day) with an almost specific effect, provided it was early employed; this effect showing itself in a rapid lessening of the intensity and frequency of the attacks, as well as in a shortening of the period of the illness. Amongst antiseptics tried by him against typhoid fever, he had got most benefit from carbolic acid (*acid phenique*), which he had, during the years 1882 and 1883, administered in one hundred and thirteen cases of this disease (in doses of 50 centigrammes twice a day, either by the mouth, or, and this commonly, by small enemata. These experiments, it was true, did not authorize his concluding that carbolic acid was the most suitable antiseptic in typhoid fever; but they were of a nature to encourage their continuance. There was constantly produced a rapid reduction of temperature, amounting to an average of 1.2° Cent., at the end of half an hour; most of the patients felt themselves comparatively well in the remissions brought about by the acid; the tongue was kept moist during the use of the remedy; the appetite was often quickly restored; and the apathetic condition of the disease was promptly improved. The progress of the typhoid fever appeared milder, and somewhat shortened as regarded time, by the acid. The issue, it was true, was fatal in seven cases (6.2 per cent.); but, in five of these cases, grave complications interposed, and in the two others treatment was commenced too late.

Alcoholic Paralysis.

A recent number of *Brain* contains an interesting account, by Dr. Dreschfeld, of alcoholic paralysis. He distinguishes two forms of the affection, the one being marked by ataxic symptoms, chiefly occurring in males, and subsiding on discontinuance of the alcohol. He thinks that the history of such cases of alcoholic ataxia, together with the absence of many of the ordinary symptoms of true dorsal tabes, suffice to determine their etiology. Moreover, tabetic symptoms—especially the absence of tendon reflex and the lancinating pains—are sometimes seen in the more typical cases of alcoholic paraplegia. This latter type is, he says, more frequent in females who have been addicted to alcoholic excess. The symptoms begin more or less acutely, and consist of sensory disorders, as hyperæsthesia of the lower limbs, sometimes with hyperalgesia, and often with lancinating pains and spinal tenderness. Anæsthesia or retarded sensibility and analgesta may follow. There is more or less motor paralysis, mostly of the lower, but sometimes attacking the upper extremities, with diminished superficial reflexes and absence of tendon-reflex. Redness of the feet, hands, and other parts, indicates vaso-motor disorder. Cerebral symptoms—as insomnia, restlessness, more or less delirium, and hebetude—may arise in the course of the disease, and are often the cause of death. As to prognosis, some cases which are early cared for recover; others recover for a time and then relapse; in others the course is steadily downward, death ensuing from cerebral symptoms, from exhaustion, or some intercurrent affection. Dr. Dreschfeld gives details of a well-marked case, which was readily diagnosed. It proved fatal, and at the *post-mortem* examination pulmonary and renal tuberculosis was found, but no lesions in the spinal cord. The peripheral nerves (the sciatics, musculo-spiral, and anterior crural were examined,) showed degenerative changes, breaking up the myeline, and in many places of the axis cylinder also. The condition is, then, one of peripheral multiple progressive neuritis, and can be distinguished mainly by its less acute course, and limitation of paralysis to the extensors, as well as by the more marked hyperæsthesia from the non-alcoholic progressive multiple neuritis described by Leyden, Strümpell, Pierson, and others. Its resemblance to lead paralysis was pointed out by Lancereaux, and Dr. Dreschfeld concludes by mentioning two cases of visceral neuralgia attributed to alcoholism, which have some analogy to lead colic.

Reviews and Book Notices.

NOTES ON CURRENT MEDICAL LITERATURE.

——The value of oleate of copper in parasitic diseases of the skin is well set forth by Dr. F. Le Sieur Weir, in a reprint before us. He analyzes its employment in 500 cases, and demonstrates its usefulness very clearly.

——Dr. Julius Wise, of 806 Olive street, St. Louis, Mo., is about to publish an "Encyclopædia of Medical Wit and Humor," and solicits contributions.

BOOK NOTICES.

The Ear: Its Anatomy, Physiology, and Diseases. By Charles H. Burnett, A. M., M. D. Second edition, revised and rewritten. Large 8vo., pp. 585. Henry C. Lea's Son & Co., 1884.

In the seven years which have elapsed since the appearance of the first edition of this work, the science of otology has advanced with no less strides than other branches of our progressive learning. Fully aware of this, the author has not shunned the laborious task of rewriting most of his text, so as to bring it into correspondence with the present state of his specialty. The result is, a larger book, and one that leaves little to be desired on the score of completeness.

The anatomy and physiology of the organ are described with great minuteness, the author having found the importance of this in his experience as an instructor. The references to the literature of the subject are frequent, and add to the improvement gained by the reader. The pages are amply illustrated, and the engravings well printed, a praise that cannot be accorded to a goodly share of the medical volumes which have of late years been rushed into the market.

The sections in which the most important changes have been made since the last edition are: The abnormalities of the auricle, otomycosis, the treatment of chronic otorrhea, the treatment of aural polypi, and the diagnosis and treatment of aural vertigo. It will be seen that these are all topics of the first rank of importance. We have no doubt that the favor which was accorded to the first edition will also be extended to the present one.

Hand-Book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M. D. 8vo., cloth, pp. 282. Philadelphia, P. Blakiston, Son & Co.

It is the design of the author in this work to supply the general practitioner with a brief, reliable manual on the most approved modern treatment of skin diseases. He therefore has omitted the consideration of their pathology, and has avoided the stumbling-block of classification by simply entering them in alphabetical order. This permits him to give much more space to questions of immediate utility than would otherwise have been possible. Numerous prescriptions are given in full, and the details of local treatment are noted with commendable accuracy. In glancing at the pharmaceutical agents recommended, we have felt some surprise that the old preparations of mercury are brought forward, to the neglect of the oleates. From our experience with the latter, we believe them to be decidedly preferable to any other combination of that indispensable agent.

Two colored plates accompany the volume, which is well printed and of convenient size.

Osteotomy and Osteoclasis for Deformities of the Lower Extremities. By Charles T. Poore, M. D. 8vo., pp. 187. New York, D. Appleton & Co.

This handsome and carefully-prepared monograph treats of osteotomy as applied to the repair of genu valgum, genu varum, anchylosis of the knee-joint, deformities of the hip-joint, and for curves of the tibia. The author has enjoyed large opportunities to study these special malformations in the hospitals to which he is attached, and describes the operations from an ample observation.

Quite a number of well-engraved illustrations add to the value of the volume, and an exhaustive bibliography appended enables the reader to pursue any topic in which he may be interested into the productions of other writers.

Atlas of Surgical Anatomy. By Professor Hencke. Translated and edited by W. A. Rothacker, M. D. Large 4to. Cincinnati, A. E. Wilde & Co., 1884.

This large and handsome volume has had a very favorable reception in Germany, and as here prepared for the American public is sure of meeting with equal success in this country. The engravings are drawn with considerable accuracy, and the typography and press-work leave nothing to be desired.

The value of such works is twofold. As guides to the student, they are indispensable, not to take the place of dissection, but to fix the application of its lessons in his mind. To the practitioner, they furnish a means of keeping fresh in mind the lessons of his student days, and serve the place of continued dissecting, which, as all are aware, it is not possible to keep up, however essential it may be to a proper skill in surgery.

We have not seen any recent atlas that will answer these purposes better than the one above named. It is condensed enough for the student, and at the same time sufficiently copious to display sections of all the parts usually to be considered in surgical practice.

Transactions of the Medical Society of West Virginia. 17th Annual Session. Pp. 154. Wheeling, 1884.

Besides a satisfactory report of the proceedings, this volume contains a number of excellent original articles. Of these we may name that by Dr. G. H. Rohé, on the "Treatment of Later Syphilitic Lesions;" "A Discussion of Listerism in Obstetrics," by Dr. W. H. Sharp; "Some Useful Suggestions on the Treatment of Phthisis," by Dr. J. P. Miller; "A Case of Œsophagotomy," by Dr. F. Howell; "A Continuation of his Reports on Surgical Cases of Rarity," by the veteran surgeon, Dr. John Frissell, of Wheeling; and a well-prepared report on new remedies, by Dr. R. M. Baird.

From Dr. Hall's report on epidemics, it would appear that typhoid fever had been the most serious disease in the State during the year 1883. The fatality was considerable. As this is usually classed among the preventible diseases, it seems to suggest a field for sanitary effort.

—An exchange says: "A widow shot herself in the oil regions the other day."

THE
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REPUTED CENTENARIANS.

A traveled gentleman recently informed us that on one occasion he had sat down to table with six persons, each of whom was over one hundred years old. This occurred at one of the missions of Lower California, and the alleged ages of the residents were verified from the birth and baptismal records of the old church.

This was more trustworthy testimony than common report or the person's belief, which is generally all that we have to depend on in such extraordinary cases. That is why they are found most frequently precisely in that condition of life where we should look for them the least, that is, among those who have had the worst hygienic surroundings and the poorest food.

In nine cases out of ten, when the newspapers chronicle a death over a century, it is either of an Irishman or a negro. We strongly suspect that this is not owing to any exceptional viability on the part of these races, but simply because, as a rule, it is not possible to verify the ages of indiviuals in their positions.

Two instances in point are before us. A correspondent sends us a notice of the death of Pompey Graham, at Montgomery, New York, at the age of 119 years. He was a negro, and claimed to have been "a big boy" when the Revolutionary war broke out. He also appeared to remember many events previous to the close of the last century.

Another instance is "Quanta," a native African, who was brought as a slave to Charleston, South Carolina, in the year 1778, and who died in Archer, Florida, last month, at the reputed age of 122 years. As a slave, and therefore a more or less valuable piece of property, his record has been traced through four generations of owners, and hence would seem to be reasonably authentic.

We may add a third, less clear in its history. An old colored woman died in this city in July, whose reputed age was 109 years. There was no convincing evidence of this, but certainly her memory ran back with ease to events of the last century.

Unfortunately, one hears of these cases only after they are gone. It would be desirable to

have a list of the living centenarians, so that some inquiry about them could be made during their lives. We shall be pleased to publish any such memoranda sent us.

THE ALLEGED POISONOUS CHARACTER OF CANNED GOODS.

The frequent assertions of the poisonous character of canned goods, often alleged in newspaper reports, has been denied in very positive terms by Gen. John P. Hawkins, Chief Commissary U. S. Army. These goods have been used for years in that department, and the opportunity has been exceptionally good to test their healthfulness, or to discover their injurious character. The result is to vindicate them, and to render it highly probable that the charges preferred against them are quite unfounded.

Throughout the whole of Gen. Hawkins' experience as Chief Commissary of a military department, he has never heard of a case of poisoning in the army from the use of canned foods, nor has he been able to find any such cases by inquiry of the medical director. The conclusion he draws from this is that "reports of poisoning by eating canned foods are not to be believed, or are only to be believed when it may have occurred by reason of a person having eaten from a can the food in which was evidently spoiled, and so spoiled that the appearance of the can would surely have indicated the unsound condition of its contents to a person exercising ordinary care."

To be sure, it may be objected that this evidence is negative; but from its wide extent and the exceptionally favorable conditions under which it occurred—that of the immediate supervision of our army surgeons—it has almost the force of positive testimony. At any rate, we must demand much more direct and strictly professional testimony in future to attach any credence to such allegations. The canning of meats and fruits is one of the most important food industries of our country; and while we should spare no pains to protect by legislation if necessary the health of the consumer, we should also maintain that it is an entirely safe article, if such it is.

SCIENTIFIC FALLACIES.

We believe it was old Dr. Johnson who said, "Let any fool, preaching no matter how absurd a doctrine, address a crowd at the street corner, and he will be sure to find some disciples."

So it seems to be to-day in the world of science. Any one who claims to have made a discovery, and on the strength of it brings out a novel theory, immediately finds a train of disciples drawn from the crowd of those who, like the Athenians of yore, are ever anxious to see and hear some new thing.

An instance in point is Dr. Koch's famous bacillus theory. With it he captured the scientific world as one captures a gudgeon with a fly. What is the result? Where is the theory after two or three short years of testing? Does any one now advocate the existence of a tubercle microbe as a factor of any consequence, either in the treatment or in the prophylaxis of the disease? So it was some years ago, when fevers of all kinds were dosed with enormous quantities of alcoholics, on some general theory of fever.

Most of these ephemeral doctrines arise from the study of physiological therapeutics, from an unhesitating acceptance of the teaching that the only true basis of a rational pharmacy is in experiments on lower animals and on persons in health.

The fallacy of such a doctrine has been so often demonstrated that it is useless again to refer to it. Yet it cannot too often be repeated. We can only learn disease from disease. Pathology is not physiology, and is not akin to it. As Virchow has often and ably urged, it is incorrect to make any suppositions about the former from the latter. Their laws and their processes are different.

So it must also be with the effect of various agents. If we wish to learn their effect on disease in man, we must study them in disease in man, and not elsewhere.

—Ex-Governor Leland Stanford, of California, intends to devote some millions of his immense fortune to the foundation of a California college, to be named after his son, who died recently in Italy.

Notes and Comments.

The Association of Flat-foot, Weak Ankle, etc., of Puberty, with Albuminuria.

In the *Brit. Med. Jour.*, May 3, 1884, Mr. R. Clement Lucas says:

Last year I published a paper "On a Form of Late Rickets Associated with Albuminuria" (*Lancet*, 1883), in which I pointed out that a condition characterized by relaxed ligaments especially, but also giving rise to some enlargement of epiphyses and yielding of bones, occurred about the age of puberty, and was commonly associated with albuminuria. This form of rickets I proposed to call the "rickets of adolescents," to bring it into accord with the albuminuria of adolescents described by Dr. Moxon, with which its etiology is identical. I have been accused of clouding the cause of this condition in language which so far obscured my meaning as to leave the reader in doubt as to what I intended to convey. The unpleasant nature of the topic is sufficient excuse for the obscurity; but I do not wish again to be misunderstood, and I will distinctly state that the invariable cause of this form of rickets associated with albuminuria is masturbation. The absurdity of treating such cases merely by mechanical appliances, by division of tendons, by osteotomy or excision of bones, when there is an underlying habit causing a general constitutional disease, will be at once obvious. It is because hundreds of such cases are being daily treated without reference to the cause, that I feel it right to draw attention to my observation, and leave no further doubt as to my meaning. The unsatisfactory results of the treatment of flat-foot and weak ankles at this period are probably mainly due to the cause having hitherto passed unrecognized. I never now treat a case of flat-foot, knock-knee, weak ankle, or lateral curvature, commencing between the ages of twelve and twenty, without first examining the urine; and in the majority of cases I find albumen present. There are many cases of lateral curvature which began in the rickets of infancy, and remain unnoticed till gradually exaggerated by growth; and in these the albumen is not present. But take a boy of fifteen, who for some months has complained of aching in his feet, weak knee or ankle, who lately has been noticed to stoop, and cannot readily run upstairs, and who, on examination, has a commencing lateral curvature; examine his urine for albumen, and you will have at once an indication of the cause. I believe this is essentially a rachitic condition, in which the ligaments yield earlier than the bones. Some enlargement of the epiphyses of the ankles will, however, almost invariably be found, and less commonly a general epiphysial enlargement is present. The epiphyses being at this age far advanced in ossification, it is but natural that they should show less clearly the changes which are characteristic of infantile rickets. In long-standing cases, the resemblance to rickets of infancy becomes more marked. Judging from my out-patient records, fifteen is the age at which this condition is most commonly met with, whilst nineteen brings the greater number of cases of first gonorrhœa, and twenty-five brings commencing strictures.

The two following cases of "rickets of adolescents" have recently attended among my out-patients:

H. F., aged 15, a bookbinder's apprentice, attended first on February 21, 1884. He had been complaining about a month of aching pain in his feet, especially the left. The pain was in the instep and ankle. On examination it was found that the arch of the foot had yielded, and that the inner ankle was unduly prominent. The urine was found albuminous. The second case, aged 15, was nearly identical.

The Influence of Micro-Organisms in the Production of Dental Caries.

Before the Odontological Society of Great Britain (April 7, 1884), Mr. Author Underwood read a paper giving the results of further investigations on this subject made by Mr. Milles and himself, since the date of a previous communication read before the Dental Section of the International Medical Congress in 1881. In this, they had shown that certain forms of micro-organisms were invariably present in carious dentine; that no change resembling caries could be produced in the absence of these organisms—*i. e.*, under septic conditions; and that, under septic conditions, a change could be produced artificially, which, if not undistinguishable from ordinary caries, certainly resembled it. The fact that organisms were invariably present had since been confirmed by numerous observers. It had been stated by Dr. Miller, of Berlin, that the dentine was first softened by acid; that the invasion of micro-organisms was only secondary to this; and that a zone of softened dentine not infected by organisms always existed in front of that which was so infected. He and his colleague, Mr. Milles, had, on the contrary, always found that the organisms extended as far as the softening; they could not find any softened dentine which did not contain

micro-organisms; and they were of opinion that the acid which softened the dentine was produced by the organisms, just as occurred in ordinary processes of acid fermentation. They had cultivated the various organisms found in carious dentine, in flasks containing purified blood-serum, after the method introduced by Professor Koch, and had ascertained that there were several distinct varieties; but experiments, made with the view of finding which of these were the most active agents, gave negative results. Dr. Miller had stated that he had produced artificially caries which he defied any one to distinguish from that which occurred in the mouth. Messrs. Underwood and Milles had repeated his experiments, and had made several of their own, but with very partial success; for, though a change resembling caries did take place in some instances, it invariably became arrested before it had gone very far. This comparative failure was, no doubt, caused by the difficulty of reproducing, in a flask or incubator-experiment, all the various conditions which were present in the mouth; and instances were quoted from the experiments of Koch, Pasteur, and Nägeli, to show that micro-organisms, cultivated under conditions not altogether favorable, became weakened, and even lost their special properties; so that the bacillus of anthrax, for instance, could be harmlessly inoculated. The authors of the paper claimed to have established that micro-organisms of a special form were an essential element in the production of dental caries. Food became lodged between the teeth, and underwent fermentation, with formation of acid and bacteria; the acid destroyed the enamel; the micro-organisms invaded the dentine, proliferated in its tubes, and lived at the expense of its organic material, their advance being accompanied by decalcification of the intertubular substance. A long discussion followed, the tone of which was decidedly favorable to the adoption of the views promulgated by Messrs. Underwood and Milles, which, it was remarked, would clear up some points which the purely chemical theory of caries did not explain—*e. g.*, the fact that the dentine was destroyed more rapidly than the enamel.

Marriage and Mitral Stenosis.

The *Med. News* tells us that in a recent clinical lecture at *la Charité*, Dr. Landouzy stated that the mitral orifice is anatomically narrower in women. On the other hand, the hyperalkalinity of their blood leads to sclerosis. These conditions explain the frequency of mitral stenosis in women. Nevertheless, as long as the left auricle, says the *Journal de Médécine*, remains in good condition, the primary lesion makes but little progress; but when the great vital test of pregnancy comes, there is danger.

Porak's statistics show that in gravido-cardiac disorders, as they are called, more than two-thirds of the cases are those of mitral stenosis, mitral insufficiency, or the two combined. Obstetricians are agreed in advertising that a woman suffering with mitral disease, especially mitral stenosis, should not marry; or, being married, should not have a child; or, having given birth, she should not nurse. A woman with mitral disease having been married, and becoming a widow without having borne a child, is in a most favorable condition if she remains content with widowhood. So, too, religious celibates who preserve their continence may have mitral stenosis, and live to the age of grandmothers.

Landouzy mentions the case of a young girl, who had been in the hospital under his care, and whom he had advised not to marry, but who disregarded his advice, married, became pregnant, and, after a miscarriage, died suddenly in an attack of asystole.

Of course, in cardiac disease, it is well to discourage marriage; but, in regard to such action, the old fable of Cupid being blind has countless illustrations, and at the bridal altar these very maidens, like other brides, deck themselves with orange flowers, the very symbol of fecundity—whether they know this or not—when they ought not to have a single pregnancy. But, when married, they are advised not to have children. How many women can control this matter? To avoid reproduction is very easy to advise, very difficult to do. Possibly, it might be well to counsel these cardiopathics to prepare for marriage by first undergoing Battey's operation. But when the wife is not sterilized in advance, a similar proposition might be made to the husband; and in the day when our gentle sisters become professors of diseases of the male sexual organs, possibly normal orchidectomy may occupy as important a place in the surgical therapeutics of men as normal ovariotomy now does in diseases of women.

However, we are not sanguine that either plan of treatment for the prevention of pregnancy will be adopted; but we are inclined to think that germicide solutions may continue to be in demand by cardiopathic wives.

The Treatment of the Apparently Drowned.

The *Brit. Med. Jour.*, May 10, 1884, says:

In our annotations of April 26, we drew atten-

tion to a demonstration in Paris of the treatment of asphyxia by Dr. Howard, in which he desired to show that the traction of the tongue does not suffice to raise the epiglottis away from the posterior walls of the pharynx. It is satisfactory that these more recent observations of Dr. Howard entirely confirm those of our associate, Dr. Bowles, who enunciated precisely the same principles in his paper, published in the *Medico-Chirurgical Transactions* in 1860. Attached to this paper is an illustration of the anatomical relations found by him on dissection, indicating in the clearest manner that, in the recumbent position, the epiglottis ordinarily lies in contact with the posterior wall of the pharynx, and is immediately raised and drawn away from the posterior wall by elevating the chin and throwing the head backwards, as Dr. Howard puts it, by placing the head and neck in a position of forced extension. It has also been strongly insisted upon by Dr. Bowles that the pulling of the tongue forward in drowning, asphyxiated, and comatose conditions, when the patient is supine, is absolutely untrustworthy as a means of treatment; for, in opening the mouth to lay hold of the tongue, the base of the tongue and the upper glottis are pressed back against the pharynx, and one cannot be sure that even severe traction of the tongue will then remove those obstacles to respiration. To this extent, Dr. Howard's observations appear in accord; and it is to avoid these obstacles, in addition to the fact that it is quite impossible to evacuate the water, inspissated mucus, and foam, from a loaded chest by the adoption of the prone position for a minute or two, that Dr. Bowles still maintains that the only simple, ready, and effective method of treating the apparently drowned is the method of the late Dr. Marshall Hall. This conviction, we understand, is forced upon his mind after an experience of five and twenty years, and a careful unprejudiced comparison of all the methods of treatment that have been advocated during that time. We think it well, from time to time, to draw attention to such a momentous question as that of drowning, in order that the profession should not rest too contentedly on authorities and names, but should continue to make independent and accurate observations.

Reocurrence after Extirpation of Tubercular Glands.

Dr. Wiskemann owns in Illzack a small private hospital, containing but eight beds. From July, 1879, to January, 1883, he treated in his institute 80 children and young adults for tubercular disease of lymphatic glands, bones, and joints, and he also performed a number of operations. He has published the result of his experience in the *Archiv. für Klin. Chirurg.*, xxx., p. 341. In none of the cases happened an accidental disease produced by the operation, and but three died, two of them of tubercular meningitis. Wiskemann made a special study of the mode and manner by which the tubercular recidive developed itself, and he has come to the conclusion that there exists a latent infection of the soil in the places where the children reside. His therapeutical procedures do not differ to any extent from those usually employed. He especially recommends, however, the *crystalline* iodoform, and says that its anti-tubercular effect is especially apparent in unaffected wounds, *i. e.*, when applied to the wound after the operation has thoroughly removed every particle of the tubercular disease. Upon granulating surfaces, where, therefore, the tubercular material may have already again developed itself, its influence is not so prompt, so that it seems as if the crystalline iodoform had more a prophylactic effect. This may also explain its action in tubercular joints after the removal of the tubercular parts. In conclusion, Wiskemann lays stress on the purity of the drug, contending that none of the other iodoform preparations could be compared with it concerning its prompt effect. His experience further proved to him that any addition to iodoform, whether made for the purpose of correcting its odor, or perhaps with the view of enhancing its effect by other disinfectants, but diminishes its therapeutic value. In general, the report makes the impression of being based upon truthful statements and well-observed facts.

Administration of Quinine by the Rectum.

Quinine is as often indicated in children as in adults, but on account of the difficulty of concealing its bitter taste, is seldom employed. Dr. R. Peck (*Deutsche Med. Wochschrift*, 18, 1884,) has made a number of experiments, and announces that quinine may be easily administered to children in the form of suppositories. He found that not only the drug is rapidly and promptly absorbed in this way, but that also far larger doses may be given than per os. He made use of from 16 to 24 grains of the muriate of quinine at a single dose, adding about 30 grains of butyrum cacao and a small quantity of unguentum cereum as mass for the suppository. He further recommends the washing out of the rectum about an hour before the introduction of the suppository,

and mentions that the latter should be pushed up the rectum as high as possible, especially in very restless children, in whom he advises the introduction of the suppositories during sleep. Thus far few observations on this subject have been published, probably on account of the uncertainty of the doses and of the effect produced. Pick's method merits a more extended trial.

Consequences of Hypodermic Injections of Ether.

A man, previously in very good health, was attacked by sciatica. The neuralgia was not very severe, but stubborn. Dr. Barbier (*Union Méd.*, 1884, No. 66,) injected a Pravaz's syringeful of ether deeply into the tissues on the posterior part of the right thigh. A grave neuritis at once set in, followed by disturbances of general sensation and by degenerative atrophy of the muscles of the lower leg of the same side. During the progress of this ominous form of neuritis, small vesicles made their appearance on the inner side of the right ankle, and suddenly changed to a deep ulcer, perfectly painless and insensitive, but penetrating to the bone, and being surrounded by a great amount of infiltrated skin. Simple rest gradually caused the healing of the ulcer. Long-continued electrical treatment also brought about an improvement of the anæsthesia and the paralysis, but no complete cure. Trophic disturbances were wanting.

CORRESPONDENCE.

Ephidrosis Produced by Mercury.

EDS. MED. AND SURG. REPORTER:—

Whether mercury will excite the sweat-glands or not seems not to be fully settled. King, in his Dispensatory, speaks as though mercury would increase the flow of sweat. The same idea seems to find expression by some of the older writers. So far as I am able to find, our latest authors pass over the point. Nothnagel, however, is not contented to pass over it, but stops to give it a dab in the following language:

"It certainly has no particular influence upon the sweat-glands; just before death severe perspiration has been observed, just as is the case in many fatal conditions; but mercury does not cause this. The sweating during mercurial cures is due to the warm envelopment in clothes, etc., warm rooms and similar causes, and not to the poison."*

This writer is remarkable for putting in his own observations and theories to the exclusion of the testimony of others, unless brought up to the touch-stone of experiments on animals.

The following case, however, settles the whole question as to the possibility of such an action:

When practicing in Maine, thirty years ago, a man brought his son to me from out of town. This son was sixteen years old, and above average height and weight for that age. Some months before this he had acute rheumatism, affecting the feet and ankles, and a reumatism-cure doctor seeing the case, undertook to cure it by remedies addressed to the locality only. The pain and swelling suddenly disappeared from the feet, when the heart became affected and greatly changed, and the pretentious doctor was at his wit's end. A regular physician was then called, and with great effort succeeded in saving the patient's life. At the time the young man was brought to me there was great commotion in the chest. The left side was heaving heavily, the heart was enormously enlarged, and the jugulars throbbing so as to be easily seen across the room. On account of the palpitation and the dyspnœa, it was with great difficulty he could walk at all.

I need not describe the case further, but simply say that after examination I informed the father that I could tell him what the matter was much better than I could tell him what would cure his son. He, however, had more faith in me than I had in myself; and the result was that he was put under my care, and a course of mercury, chiefly calomel, was advised, with a view of "touching the system," in hopes of promoting absorption about the orifices and valves. He was left with me under close observation, that the effects of the mercurial might be watched and not be allowed to go too far. Every day for several days I was examining the mouth, but there was no mercurial breath, no tenderness nor extra secretion. At length, several days after it should have occurred in the mouth, his skin began to smell, and a profuse clammy sweat made its appearance. This odor soon became almost intolerable. His clothes, the bed, and everything which came in contact with him, was contaminated with the horrid stench. I had "affected the system," but the skin showed the effects of the mercury, not the throat and mouth; for I had produced on the sweat-glands just such action as I was looking for on the mouth. The excessive sweating lasted about a week, but the odor continued for two weeks longer.

That this was a case of the specific action of mercury on the sweat-glands, producing precisely such effects as usually occur in the mouth, there can be no more question than that I am writing this sitting in my chair and not standing on my head, even if Dr. H. Nothnagel was not there to be an eye-witness to the fact.

By the end of ten days, when the father came for the son, I found a favorable change taking place in the symptoms. Digitalis, with other remedies, was followed up, and potassium iodide was substituted for the mercury. Two weeks later the improvement in the symptoms had become marked, and in six months he was comparatively well. I saw him several years later, an enterprising business man, when he told me that he had remained perfectly well ever since his recovery.

This was a remarkable case to begin with; the effect of the mercury on the sweat-glands rather than on the mouth and throat was also remarkable; but most remarkable of all is that so seri-

*Materia Medica and Therapeutics, vol. 1., page 196.

ous a case should have been perfectly restored. I have never tried to salivate many patients, but I have never regretted the effort in his case, though the salivation did not occur where I was expecting it. *The teeth did not suffer.*

Boston, Mass. E. CHENERY, M. D.

Diagnosis and Treatment Wanted.

EDS. MED. AND SURG. REPORTER:—

Will you or some of the readers of the REPORTER give me the diagnosis and treatment for the following case: Frank M., age 27, single, son of stave and lumber manufacturer. Has for ten years past at different times pointed staves; that is, cut the staves ready for barrels, treading with one foot while standing on the other. This work he had to quit on account of pain and soreness of the feet. At one time quit this work for two years. In all, during the ten years, has worked about four years. Has not followed this kind of work for the past three years. He now has pain of prickling character all the time during waking hours, and more or less at night. Recumbent position relieves it to some extent. On first rising to his feet the pain is so great that he cannot take a step for a few moments, until his feet became used to his body weight. He says, "My feet feel as if the bottoms were pounded with a hammer until they were bruised." He has had pain for six months in lumbar region, but says, "has nothing to do with my feet, because I suffered with feet long before I had pain in my back." This pain is relived by rest and elevation of limbs. "At special times pain concentrates at one point, and at times pain is so great that it seems something is coming out of my heel at the point upon which I stand." Then he has no pains in other parts of the foot. At times the foot will become swollen at the under surface of the arch. The patient is intelligent, being now a teacher. Has good habits and general health is good. A. J. B.

Andrews, Ind.

Treatment of Malaria.

EDS. MED. AND SURG. REPORTER:

In my student days I was taught that malaria disappeared with the coming of frost, but I practice in a country which it seems had not at that time been studied. We have malarial diseases the year round. A freezing temperature lasting for days and weeks does not stop it. We have *typical nothing* except malarial diseases; all others are complicated, malaria being a conspicuous element. Hence, cases of chronic malarial poisoning are quite numerous. 'Tis quite common to have patients apply for treatment in this condition: Skin dry and sallow, bowels constipated, tongue furred, taste bad, urine scant and high-colored, appetite capricious, daily exaltations of temperature without rigors, night-sweats, great nervousness, and poor sleep, spleen enlarged to four or five times its normal size, more frequent in females, and especially so in those who have borne children; loss of strength and weight. In such cases after checking periodicity and arousing secretion with *mercurial* purgative, Cinchonidia is used almost to the exclusion of quinine here. I place patient upon one of the following:

℞. Tinct. iodinii comp., f. ℥j.
Liqr. potass. arsen., f ℥ij ℥ß.
Ergot, ex. fld. f. ℥v ℥ß.
Elix. simplicis, q. s. ft. f. ℥iv.

M. A teaspoonful, (℥j.) for adult, after each meal.

Or,

℞. Potass. iodidi, ℥ij. ℥ß.
Liqr. potass. arsen. f. ℥ij. ℥ß.
Vin. ferri amari., f. ℥iv.

M. A teaspoonful (℥) after each meal.

The first I prefer, though sometimes alternate. Have known this to be taken four months consecutively. Have also used it in other glandular enlargements and fibroids, and noted its good effects beyond question.

I have had abundant opportunities of trying these combinations in cases of chronic malaria with enlarged spleen, and so can testify to their superiority over any of the many other combinations which I have tried. I don't think I have ever seen either of the formulæ in print; if so, the fact has escaped my mind.

E. A. WAGGENER, M. D.

Carrollton, Mo.

NEWS AND MISCELLANY.

Report on the Electrical Exhibition.

There has rarely been an undertaking which drew as many strangers to our city, and which excited as much interest amongst our own citizens, as the electrical exhibition. Two classes of visitors are especially benefited by it. First, those who have made a study of electricity, and who are able to comprehend the apparatus exhibited and can be but astonished at the great progress made of late in this respect; and, secondly, those who, having heard and seen a great deal of the electrical light, and of the practical uses to which, especially, magneto-electricity may be put, never had the opportunity to observe the working of the new motor. While by an exhibition of this kind the expert is informed of what others have invented, the uninitiated receive valuable instruction, which will bear the more fruit the greater the theoretical knowledge previous to visiting the exhibition.

The managers recognized this fact, and they arranged a number of instructive lectures to be delivered at the place by men thoroughly conversant with the modern practical application of electricity and the physical laws bearing upon it. These lectures are still continued, and to judge from the size of the auditorium, fully appreciated.

But while the managers have acted wisely in this respect, with regard to some exhibitions they have committed an error, which we mention with the view of inducing other undertakings of this kind to be more careful concerning the nature of the goods which they permit to be exhibited. There is, for instance, one stand where Rhinestones and all kinds of cheap jewelry are for sale. Most of this jewelry has not even the merit of being plated, a fact which, if done by electrolysis, would bring it at least into some connection with electricity; but as most of it is made simply of the

thinnest silver, it should be properly exhibited at the side of the board-walk in Atlantic City. Another exhibition seemed to be really a booth transferred from the seashore. It consisted of shells and ornaments made of shells. We tried to discover the possible connection between a pocketbook or a breastpin made of shells and electricity, and were able to detect but one plausible cause that could have induced the manager to admit such goods, and which probably is the same that decided them to permit enterprising firms to exhibit furniture, curtains, and carpets, viz., to show the effect of the electrical light upon these articles. We hope that this useful idea of the managers will not fail in its more practicable effect—the attraction of purchasers of silver breastpins, Rhine-stone jewelry, shell ornaments, and household furniture.

If we exclude from the exhibition all that properly belongs to a county fair, we may divide the real electrical exhibits as follows:

1. Machinery, by which the dynamos are set into motion, beginning with the boiler and ending with the complete engine. I. S. L. Wharton and R. Norris show an improved Harrison safety boiler with the so-called spheres or units, which have ground rebate joints. These are strung on heavy bolts forming a parallelogram, called a slab. Their number varies according to the horse-power desired. Then there are numerous high-speed engines, the Southwark Foundry and Machine Co., of our city, having the largest exhibit of motive power, four Porter-Allen and two Southwark high-speed engines. The Porter-Allen, by the by one of the finest pieces of workmanship we ever laid our eyes on, is especially well adapted to high-speed by reason of its four-ported steam and exhaust-valve connections and the compensation afforded by its peculiar link for the inequalities of piston speed near the two extremities of the stroke, by the solidity and excellence of its frame, and by the skillful adaptation of the weight of reciprocating parts to the rotary velocity. It will give piston speeds of from seven hundred to eight hundred and eighty feet per minute. Especially well suited for dynamos are also the gas engines, especially the Otto gas engine, manufactured by Schleicher, Schumm & Co., 33 Walnut street. It the simplest engine possible, and has no gearing wheels of any kind. The varying load of the machine itself regulates the gas-supply by a cut-off mechanism. The pressure utilized for the production of the power is generated in the cylinder, and at once availed of therein to propel the piston. This pressure is due to the combustion of a peculiar mixture of common coal gas and air, which is ignited by a small flame, carried from a burning gas jet outside into the cylinder by the motion of the slide. When full power is produced, twenty-one and one-half cubic feet of gas per indicated horse-power per hour is all that is needed, making a cost of from two to four cents, according to the price of the gas. The most remarkable part about this engine is, that the consumption is limited in proportion to the load on engine, as the cut-off is in continuous operation while running. The engine costs nothing while standing, and is started and stopped without waste of fuel and time, and uses just as much gas as needed, and no more. The machine is noiseless in action. On account of the great regularity of their motion, these engines are specially adapted to the driving of dynamo-electrical machines. Two are in operation in the annex of the exhibition.

2. After an examination of the engines, the sight-seer should, by all means, go to take a look at the dynamos. They simply consist of two soft iron cores around which an endless insulated copper wire is coiled, and between the two a permanent steel magnet is rotated. No matter what their size or their shape, upon this principle all are built. And we will here remark, that those who are still waiting for a cheaper production of electro-motive force, will wait in vain. The principle is now so completely mastered that only improvements in the mechanical working can be expected. Just as the principle first applied by Watts to the steam-engine to-day still is the same—heat being necessary to change the water into steam, and this having to be compressed to give it the needed intensity or force—so in electricity, the principle of the electro-motive force is well understood. There is no perpetuum mobile, and never will be. It takes a force to set a dynamo in motion, whether this be an engine or in small affairs a galvanic battery; but without such a force there can be no generation of electric force. There are many dynamos exhibited, almost all ranged under the north gallery and in sections by themselves. At many places placards are hung, reading: "The dynamos will magnetize your watches. Keep away!" The management has provided a safe at the office where watches can be kept, though a piece of silk (not half cotton) well wrapped around the watch answers the same purpose. There are about two hundred dynamos exhibited, the largest in Edison's department, near to the entrance at 32d street and Lancaster avenue, and in Brush's, United States, Call's, and other companies' sections.

3. Parts needed in the manufacture of electrical instruments, and in the practical application of electro-motive force. The incandescent light, of which thousands can be seen in operation at the exhibition, consists of a slightly elongated hollow ball of glass with an opening just sufficient to permit the entrance of the two insulated wires, conducting + and — electricity, and the platina-wire uniting them, while the so-called arc lamp consists of two electro-magnets, one in the main, and one in the shunt circuit; to the latter is hinged a soft-iron armature, the free end of which moves under the influence of the opposite pole of the main magnet. The armature carries the carbon-lifter, so that any motion imparted to the armature, under the influence of its electro-magnets, is directly communicated to the lifter, either separating the carbons or allowing the same to feed. The sparks passing during neutralization of the two opposite electrical currents from pole to pole, keep the carbon-rods burning, and thus produce the light in arc lamps. The carbons, glasses, wires, and other parts needed, are all exhibited by various manufacturers. Edison has erected an immense column, around which wind in spiral lines thousands of incandescent lights, some colored red, others white. At certain hours, 6, 7, 8 p. m., etc., they are lighted, usually some of the spiral lines alternately, and the

flashes of light thus produced present a beautiful picture. There are many firms exhibiting the utensils needed in electrical manufactories. Alfred E. Moore exhibits an attractive display of insulated wire, from the thinnest insulated copper wire to the thickest cable. Moore's factory, at 3d and Race streets, has also a historical interest, having been established in 1820, and sold to Prof. Henry, the great scientist, the first insulated wire. The Brooks underground cables are also shown, and at another place is a historical collection of electrical machines. Carbons are exhibited which give the light of sixteen, and such which have an illuminating power of one million candles.

4. The largest class of exhibits is that of practical applications of all these various discoveries. We can enumerate only a few, as the shortest description of all would fill more pages than the reading material of a number of the MEDICAL AND SURGICAL REPORTER occupies. As mentioned, near to the entrance is Edison's exhibit. There are all kinds of electric lights and dynamos, phonographs, microphones, and instruments to measure the force of an electrical current, galvanoscopes, rheostates, and rheotomes. A fountain with many various jets near by offers cooling, the pumping being done by aid of dynamos, while also near a broad sheet of water falls from a considerable height into a beautiful grotto, electrical incandescent lights illuminating the whole and bestowing upon the scene a wonderful aspect. A very interesting object is the printing press of the *Electric World*. The press is run by a Daft-motor, supplied with a current by a Daft-dynamo.

The Electric Matting Company, of this city, has an ingenious device by which it proposes to alarm burglars and put housekeepers on their guard against uninvited nightly visitors. Drawbaugh, Bell's rival, exhibits telephones and transmitters. The Electric Supply Company shows many fine instruments, and a number almost too large of various sewing machines belonging to various firms is run by all kinds of dynamos, the Brush Company and the Cleveland Motor Company providing the most. These small dynamos may also be run by a galvanic battery. The Electric Novelty Company has many devices on exhibition calculated to amuse. A small railroad, run by a dynamo, is one of them. Louis Speller's varied assortment of electrical clocks also merits mention, and a loom run by a dynamo, while the American District Telegraph Company parades its novel burglar alarms. The Thompson-Houston exhibit is rich in dynamos, and at the United States Electrical Lighting Company, whose expert is Edward Weston, a number of assistants are gladly willing to explain the mechanism of their apparatus.

Nobody should fail to visit the exhibit of the Army Signal Service, and the whole United States exhibit. Here are shown the igniting of a torpedo, the manner of illuminating those deadly machines if secreted in the water, and the other ingenious devices useful in war and of value in peace, especially for meteorological observations. The Multiplex Telegraph Company, opposite, exhibits a wonderful apparatus by which seventy-two messages may be simultaneously sent over one wire. Prof. Gray's machine for transmitting sound by electricity especially attracts attention, as he is the first inventor of the telephone. The Bell and Western Companies exhibit a central telephone station, and shows how two speakers are connected by the operators at the central station.

In the gallery, a Roosevelt organ is played by means of an electrical current. Several quacks have mysterious instruments and all-curing electrical baths for sale, and ice cream may ad libitum be swallowed at ten cents a portion, which is very reasonable. Probably to let the iron chain become magnetic and attract the individual "copper," or to assist digestion, all the chairs of the thriving ice-cream, cake and candy establishment are chained to the floor, thus forcing parties of more than four to sit a greater distance apart than would permit inductive action. But there are four exhibits in the gallery which are worth visiting. First, the Van de Vorle system of electric lighting, where various motors, arc and incandescent lights, lamp-hangers, focusing lamps, the electrical transmission of power, and an electro-plating machine, may be studied. On the east gallery the nickel-plating works attract the attention of all, not only by showing the apparatus and the manner of its working by nickel-plating before the eyes of the visitors, but also by exhibiting all the raw materials and minerals used in the process. A crown-shaped crystal of sulphate of nickel merits special mention. Further south, Otto Flemming has an attractive display of all medical batteries manufactured by him; and, on the south gallery, chickens are hatched by aid of heat given off by incandescent lamps. Nearly daily some chickens just escape from the eggs, while visitors fasten their curious eyes on the youngsters. W. C. Taylor has erected near there a photographic studio, where he takes likenesses by electric light. In the annex, the application of electricity to railroad-signaling and the propelling of a car by electro-motive power are demonstrated.

On mounting the tower one sees the enormous electric detector-lamp of the U. S. Navy Ordnance, which is said to have an illuminating power of one million candles. The coins copied by electric process from those in the British Museum—a rare and interesting collection—and the library composed of books all treating of electricity, consisting of over 3,000 volumes and chronologically arranged, will pay for the time spent upon their inspection; while on the return way one may look at a brick-making machine of Chambers, Bro. & Co., 52d and Lancaster, which manufactures 25,000 bricks within 10 hours, an electrical counter-attachment counting their numbers. Henry Clay of this city exhibits his telephone, which accommodates itself to loud as well as to low talking. This telephone is now being introduced into this city, and seems to offer special advantages. It consists of a square transmitter of vulcanized material $\frac{1}{16}$ and $\frac{1}{8}$ inch thick, a receiver and an automatic switch. The receiver is hung on a fixed hook on the transmitter. By removing it a tongue projecting from the box is raised, and a switch moved within the box, thus establishing the necessary electric circuits, connecting the individual instrument with the central office. The inventor claims that this telephone keeps up a continuous

circuit within the limits necessitated by loud talking at the transmitter, and to do so without any special adjustment. There is no rattling sound caused in the receiver by loud talking, as has generally been complained of in other telephones. The office of the company is in the Shakespeare Building, Chestnut Street. Exchanges have been established at Third and Chestnut, and Third and Berks streets, and are in use since July. Over two hundred miles of wire connect the five hundred instruments now in regular operation. In Chester and West Chester, exchanges have also been successfully established. From its many advantages, all predict the future popularity of the Clay telephone.

Another important discovery is the Siemens lamp. Air and gas are introduced in proper proportions into the flame. The gas in a cold stage passes through chambers and pipes to the burner, while the cold air is driven through another chamber, where it is equalized. The top of the burner is of porcelain, and the flame descends into the regenerative heating chamber. By collecting the waste heat and the products of the flame in the chamber, its temperature is raised to 1600° Fahr., and as the other chambers surround this one, they and the gas or air they respectively contain, are also heated up to the same point, thus increasing the illuminating power of the gas. A common burner furnishes for every foot of gas consumed three and a half candle-power, while Siemans' burner under the same circumstances possesses the illuminating power of ten candles. The flame is said to be very steady, and the burner to act as a first-rate ventilator. The lamp is manufactured at 23d and Washington avenue, in this city.

Lastly we will mention the Excelsior electric system. It claims to give a more steady light than any other, in consequence of an automatic governor, while its lamp is the most perfectly insulated.

The Medico-Chirurgical College of Philadelphia.

Dr. James E. Garretson, who has been elected president and professor of surgery in this institution, inaugurated his clinical service, Saturday, Sept. 6th, in the presence of an amphitheatre filled with students from the different colleges of the city, together with a notable gathering of Philadelphia's most distinguished physicians and surgeons, the latter attracted by the use which was to be made of the surgical engine in an operation devised by Professor Garretson for exsection of the inferior maxillary nerve where it emerges through the base of the skull at the oval foramen.

The lecturer invited the attention of his audience to the manner in which student life was to be lived in relation with the Medico-Chirurgical College. He directed notice to the fact that the institution was a system of departments conducted by enthusiastic and proficient specialists, a majority of whom were alumni of the European Continental Universities. "The work of the student," said the clinician, "is to be done side by side with these teachers; he is to observe at the bedside, to delve, to sift, to reason. No offense is meant," said the lecturer, "when is implied an intention to introduce a more philosophical manner of educating young men than now ordinarily obtains. A fault of to-day is observation directed to sequence rather than to antecedent; pills are given the place of principles. We here have banded ourselves together for mutual help in carrying our own attainments forward. Taking us together, it is no lack of modesty to say that we know a very great deal of general medicine and surgery and of the specialties. What each one individually knows, he will give, getting in return. What we are to do for ourselves, we propose to do for our students. He who throws in his professional fortune with ours, will share everything possessed by us. We want, as a class, the young men who are anxious to learn. We desire to have the educated seek our school. We provide well and fully, however, for the energetic lacking desired advantages, by an auxiliary literary course established now over four years, where, without additional cost, our matriculate may mend his defects. A physician is to be a gentleman. Gentility shows shabby without education. We have means to educate. Personally speaking, I shall have more satisfaction in teaching the single student who comes to learn, than in discoursing to the score whose single idea is the diploma; and in this I echo the sentiment of my colleagues.

As President of the Medico-Chirurgical College, I am quite well aware that the Faculty has not struck the most popular key-note as far as pecuniary success is concerned. I know, out of a long experience with students, that three years and a graded course intimidate. I know as well, however, that graded courses and continued testings constitute the only way of medicine, and that it is time that the American people shall come to be protected where they cannot protect themselves. I assert that if we are properly seconded we will secure eminence to our graduates, and this necessary security to the people whenever after the "M. D." shall succeed the letters, "M. C. C., Phila." "Silk purses are not to be made out of sow's ears." I will start, young gentlemen, by accepting that every student here met together is possessed of the cocoon property which allows of an endless stretching out.

The Greek Cure of Hydrophobia.

A correspondent writing to the *Liverpool Post* says: Dr. Xanthos, in 1823, was compelled, by disturbances in his own country, to take up his residence in Zurich, where he met a Greek, from the Peloponnesus, past middle age, and familiar with the customs of his country. He said that all that was necessary to cure the bite of a mad dog was to cut out, with a sharp knife, and on the ninth day, the blisters which appeared under the tongue of the person bitten, and which the Greeks called "Lyssais-rabies caninis," and to suffer the bleeding until the poison was discharged. Dr. Xanthos immediately sent certain written questions from Heidelberg, and obtained from Aron the following reply, from Polychronis, a Thessalonian; "If a man is bitten by a mad dog, on the ninth day small blisters, called lyssais, appear under the tongue. They are rather dark-colored, about the size of a pea, some of them

smaller, and look like flesh. They are situated on the under side of the tongue, under the membranous band, particularly on the side of the veins. If you observe the tongue of a sound man, and then examine that of a man who has been bitten by a mad dog, you will immediately see the difference. As soon as these lyssais are observed they must be cut out with a sharp knife, and the bleeding continued till the poison is discharged. If this is neglected or deferred too long, the brain becomes affected, and the patient will die in deplorable convulsions."

"Seven Greeks," said Dr. Xanthos, "who were stopping at Azov, natives of Thessaly and Epirus and the islands of Greece, confirmed this testimony." An Epirot at Basle informed the doctor that in his country, after the lyssais had been cut out and the wound had bled copiously, it was the custom to rub it with garlic and common salt. He answered the doctor that he had frequently seen this done, and after the plan had been carefully pursued, the patient after the fortieth day was out of danger. He also added that the inhabitants of the neighboring mountains, after the operation on the lyssais, washed out a gun-barrel with water, and made the patient wash his mouth with the rinsings. Thirteen Greeks stopping at Basle confirmed this testimony. A Pelopoñnesian, 80 years old, who had been in trade from fifteen to twenty years in Russia, who was then in Switzerland, told the doctor that he had often employed this method in Russia with the happiest success. In some parts of Greece, after the operation, it was the custom to squeeze river crawfish to the wound. The inhabitants had great faith in the efficacy of crawfish in cases of hydrophobia, and used them internally and externally. From all this information, it appears that the treatment of this frightful disorder throughout Greece was by excision of the lyssais. That it had its origin in Greece is evident from the name, which is used throughout that country.

The Veterinary College of the University of Pennsylvania.

The Veterinary Department of the University of Pennsylvania is now open for the reception of students for the first year's course of studies. The introductory lecture was given on Thursday, October 2d, in the amphitheatre of the veterinary buildings, Thirty-sixth and Pine streets, by Professor Huidekoper.

The following comprises the faculty of the Veterinary Department:

William Pepper, M. D., LL. D., Provost of the University, and, *ex officio* President of the Faculty.

Rush Shippen Huidekoper, M. D., V. S., Dean of the Faculty, Professor of Internal Pathology, and *pro tempore* Professor of Veterinary Anatomy.

James Tyson, M. D., Professor of General Pathology and Morbid Anatomy.

Horatio C. Wood, M. D., LL. D., Professor of Materia Medica, Pharmacy, and General Therapeutics.

Theodore G. Wormley, M. D., LL. D., Professor of Chemistry and Toxicology.

Harrison Allen, M. D., Professor of Physiology.

Joseph T. Rothrock, M. D., B. S., Professor of Botany.

Andrew J. Parker, M. D., Ph. D., Professor of Comparative Anatomy and Zoology.

Robert Mead Smith, M. D., Professor of Comparative Physiology.

—— ——, Professor of Surgical Pathology and Obstetrics.

Adolph W. Miller, M. D., Demonstrator of Pharmacy.

Henry F. Formad, M. D., Demonstrator of Pathology and Morbid Anatomy.

H. Horace Hoskins, V. S., Demonstrator of Anatomy.

Alexander Glass, V. S., Demonstrator of Therapeutics, Materia Medica, and Pharmacy.

Medical Society of Virginia.

The Medical Society of Virginia was in session from Tuesday, September 16, to Friday, September 19, at Rawley Springs. The society appears to be in a flourishing condition, there being about one hundred and fifty doctors in attendance, and about sixty new members received, while financially it closes the year with $258.00 in the treasurer's hands. Dr. Chancellor, of Charlottesville, was president last year, and Dr. S. K. Jackson, of Norfolk, holds the same place for this year. Dr. L. B. Edwards, of Richmond, is secretary, and Dr. R. T. Styll, treasurer. From day to day papers on advances in various branches of medicine were read and discussed, and several valuable volunteer papers presented. The law passed by the legislature last winter constituting a Board of Medical Examiners, made it necessary for the society to recommend to the Governor three physicians from each Congressional district, and two from the State at large, to examine all doctors who may in future apply for license in the State.

The society meets next year at Alleghany Springs, and the subject for discussion will be scarlet fever. This year they discussed malaria. Thursday night the society adjourned at 10 p. m., to partake of a complimentary banquet given by the managers of the Springs, after which toasts were offered: "To the country doctor, the rough diamond; rub against him, and you find him of the first water." Dr. J. S. Apperson, of Smyth county, responded, who made a remarkably good speech, giving, as a country doctor, some excellent practical advice to the society.

Items.

—Hog cholera has been prevailing since last winter in certain counties of New Jersey.

—Prof. Braun, of Heidleberg, has been called to the Chair of Surgery in the University of Jena.

—Prof. Hermann, of Zurich, will take the Chair of Physiology at Königsberg, rendered vacant by the resignation of Prof. von Wittich.

—A boy recently died at Beckenham, England, from spasm of the glottis, caused by swallowing some glass, a considerable quantity of which was present in a pot of marmalade of which the deceased had partaken.

—A medical man was ill-treated and wounded by the inhabitants of Porto, a district of Naples,

where he went to attend some cholera patients. A crowd gathered round him, and accused him of being a poisoner.

—A professorship of hygiene is to be established shortly in the University of Berlin, and a special institute is to be erected for this course of study. Similar arrangements are likely to be made before long in the other German universities.

—W. T. Slatton, of Greenville, S. C., has been totally blind for a number of years, and yet freely drives about alone in a buggy, and can manage all his multifarious affairs, which include running a saw-mill and a "gin" mill—of the cotton kind.

—A pear cure, something after the order of the grape cure, is now in vogue in Oakland, Cal. The diet is wholly of Bartlett pears. An invalid is said to grow thin upon it at first, but in a few weeks usually grows stronger.

—Large numbers of dried and smoked lizards are imported by the Chinese physicians. They are used in cases of consumption and anæmia with considerable success. Their virtue seems to lie in the large amount of nitrogenous compounds and phosphates they contain.

—Chamomile flowers are so abundant in Athens that Dr. Landerer, who contributes to the *Drug News* a note on the subject, says that the gardens of the city would supply all the demands of Europe. The chamomile flower is known in Greece as the "April flower," as it blooms in that month.

—Prof. W. O. Atwater, in his paper on the chemistry of fish, before the American Association for the Advancement of Science, contended that it had been shown that fish was as readily digested as flesh meat. Oysters, however, he regarded as far less nutritious than fish.

—Dr. Bossana, of the Pharo Hospital, at Marseilles, telegraphed on September 9th, that Drs. Reitsch and Ricati had just informed him that several animals which they had inoculated with Dr. Koch's microbes had died with choleraic symptoms—results which Dr. Koch had failed to obtain.

—A case of severe orchitis with epididymitis and slight effusion into the tunica vaginalis, is reported by Zacco (*Gcz. degli Ospitali*) as having occurred in a malarial patient; the usual measures availed nothing, and only quinine made an impression and effected a cure. There was no other cause than malaria assignable.

—First Party: "Have you any court-plaster?" Second Party (a druggist): "No; but here's some sticking-plaster. You see we have no royal family in this country, and therefore no court, and consequently no court plaster. If your finger is cut you will have to take a piece of the democratic article, or go somewhere else."

—The word "microbe," now so commonly used, was coined by M. Charles Sédillot, of Strasbourg, in February, 1878, in a paper which he read on the application of M. Pasteur's discoveries to surgery. Coming from the Greek words *μικρος*, small, and *βιος*, life, it aptly describes the thing intended. In replying to M. Sédillot, M. Pasteur used the word twice, and scientific men have since generally adopted it.

—The first number of the *Internationale Centralblatt für Laryngologie, Rhinologie, and verwandten Wissenschaften*, has recently appeared. It is a monthly, containing a résume of all the articles, brochures, or books on diseases of the larynx, nose, and allied organs. The American collaborateur is Dr. George M. Lefferts, of New York. It is published by Hirschwald, of Berlin.

—The International Medical Congress of 1884 may be written down as a great success; 1,600 medical men attended it, 1,200 of whom came from foreign countries. Some of the work done will leave a lasting impress on science; the reception will leave an impress for ever upon those who were fortunate enough to share in in it; so that the name of Denmark will become a cherished memory.

—A contribution to the comparative anatomy of the races of mankind has been made by M. L. Testut, through the dissection of a Bosjesman from twelve to fourteen years of age. The studies revealed a muscular system in a more or less rudimentary state, which exists in a normal condition in various anthropoid and other apes. Commenting on the paper, when it was read before the Academy of Science, Paris, M. de Quatrefages remarked that it supplied no fresh argument in favor of the descent of man from a simian prototype.

—In his address before the American Public Health Association, Dr. Hunt, while speaking of the difference between a man who is able to discover a fact and one who can discover merely an account of one, illustrated his point by referring to the mental habits of astronomers. It appears that a Washington astronomer was at a recent marriage reception, and, being somewhat absorbed in thought, was asked if he had paid his respects to the bride. "No," was the answer, "I have not." "But why do you delay?" asked his friend. "Because," said he, "I have no facts to communicate."

—The late Dr. Gross, like many another scholar, admired the ancient Greeks, and the Greeks were cremationists. Heraclitus, holding fire to be the primary principle in nature, advocated burning; and Eustachius, a Greek bishop of Thessalonica, who died in 1198, assigns, in his famous commentaries on ancient Greece, as reasons for the general practice there of cremation, the fact that bodies were deemed unclean after the departure of the soul and required purification of fire, and also that fire refined the physical entity, separated from it all that was corruptible, and facilitated its flight to the heavenly regions.

OBITUARY NOTICE.

DANIEL SPITLER, M. D.

Dr. Spitler died at Iroquois, Ill., July 23d, 1884, of congestion of lungs. Dr. Spitler was born in Page Co., Va., in 1843, graduated at Rush Medical College, Chicago, in 1869, and at his death stood high in the medical profession.

DEATH.

BRADNER.—September 23, 1884, Roe Bradner, infant son of Dr. N. Roe and Annie Patzner Bradner, of Philadelphia.